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ABSTRACT

This final report of the 3-year Grand Forks, North Dakota, ESEA Title III project focuses on the impact on the school district (11,500 pupils) and its instructional program of a six-school experiment in which two elementary and one junior high school were provided with one teacher aide for each six teachers. The intrcduction describes the community-school setting and objectives of the program. Part 1, "We Saw It Happen: Individualized Instruction," has sections on flexible scheduling, the contract system, differentiated staffing rationale and description, vocational core, training teacher aides, inservice training, and evaluation implications. Part 2 describes the significance of the impact of teacher aides cn schools. Part 3 contains reports of the program in each experimental school. Part 4, "The Teacher Aide in Special Education," has sections on language development, teaching motor coordination, and a comparative study of traditional procedures and operant conditioning procedures as applied to speech correction in public schools. Part 5 summarizes subjective evaluations by teachers and aides. Part 6 lists 25 publications (including various progress and continuation reports) and two films disseminated by the project. (ED 035 576 and ED 035 579 are related documents.) (JS)

ED044374

FINAL REPORT

THE IMPACT OF: THE TEACHER AND HIS STAFF

"IMPLEMENTATION OF THE TEACHER AND HIS STAFF

ESEA TITLE III

GRAND FORKS, NORTH DAKOTA

JULY 1970

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and

The School Board
Dr. Wayne Worner, Superintendent of Schools

by

Margaret Abbott, Project Director

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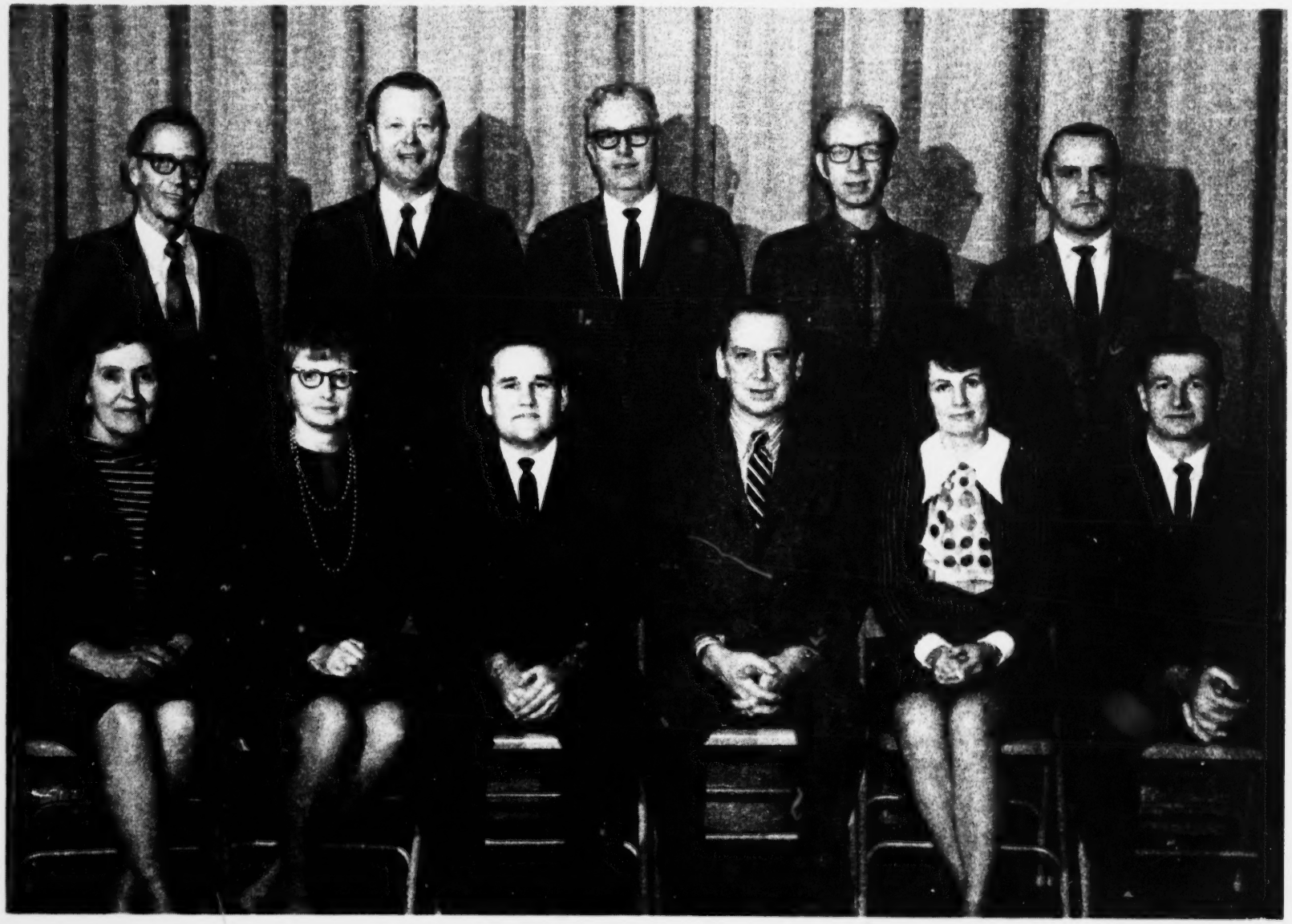

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FOREWORD

This booklet signals the end of the Title III project, "Implementation of the Teacher and His Staff," in the Grand Forks Public Schools. The program, which has as its purpose the improvement of instruction through staff professionalization, is however, only in its beginnings.

In 1966-67, the year of the "Non-Conference," the National Council of Teacher Education and Professional Standards (NCTEPS) said: "The job of the teacher has become unmanageable. The self-contained teacher and the self-contained classroom and the self-contained school are obsolete." The Council also suggested that now was the time to break with the past. As its contribution to this step in a new direction, the Grand Forks School System asked Dr. Harold Bergquist, now Assistant Superintendent of Schools, to write a proposal for the local project which became "Implementation of the Teacher and His Staff."

Experiments and investigations of new ways to utilize staff in the schools grew out of the program, with major emphasis on the use of teacher aides. Any change in the traditional way of doing things is difficult because teachers, like other people, find security in established roles and routines. Yet educators realize that change must first be considered in terms of its value to the learner, and it was with this criterion in mind that all programs in Grand Forks were carried out.

The change required great patience, resourcefulness, and understanding on the part of the participants. It was discovered that teachers gave their full cooperation when they found that the recommended approaches had value and significance. Given the proper environment, the schools went about the job of improving the quality and timeliness of education, shifting the concept of teaching to the concept of learning. Interest and encouragement came from all levels of the school community in Grand Forks.

It is hoped that this booklet will serve both as a report and as a "thank you" for the generous cooperation of all the people involved. Many teachers, aides and administrators, whose names are listed elsewhere in this volume, contributed written reports and interviews for background information. Dr. Wayne Worner, Superintendent of Schools,

has expressed his views of the status and significance of this program in a section of the booklet. Some of the photographs used in the report were taken by David J. Behl of Behl's Photography, and the remainder were taken by the Project Director.

Margaret A. Abbott
Project Director
1967-1970

THE COMMUNITY--THE SCHOOLS

THE START

Grand Forks, North Dakota, a city of approximately 38,000 residents, lies at the heart of the valley of the Red River of the North, about 100 miles south of the Canadian province of Manitoba. Originally, called les Grandes Fourches by French fur traders in the 1850's who found the land at the forks of the Red and Red Lake rivers a convenient camping place, the settlement later came under the control of the Hudson's Bay Company who used it as a headquarters point for their trading posts in the valley. The city has always been a transportation center--first for river navigation and later for the Great Northern and Northern Pacific railroads. At present it is a division point for the largest railroad system in the world--the Burlington Northern. Since the days of the sod-busting homesteaders in the late 1870's, however, Grand Forks has been primarily an agricultural community specializing in wheat, potatoes, and sugar beets. Education is another important commodity in this community where the University of North Dakota with a student body of more than 8,000 and a faculty of over 500, is in its ninth decade.

The Grand Forks Public School District, utilizing a professional staff of 522 persons, endeavors to provide meaningful educational experiences for 11,500 pupils. This number, which includes pupils from the Grand Forks Air Force Base, constitutes nearly 6 per cent of the total elementary and secondary pupil population of the state of North Dakota.

While the ethnic background of the region has always been strongly Scandinavian, the population has become more diverse since World War II. The Air Base pupils in particular bring a cosmopolitan, indeed a world-wide, character to the community. Two large elementary schools built on the Base house the elementary grades there. Secondary pupils from the Base are bussed sixteen miles each way daily to and from the city schools.

The 1966-1967 school year was an important one for education nationally and in Grand Forks. It was the "Year of the Non-Conference"--a phrase referring to the decision of the National Commission on Teacher Education and Professional Standards (TEPS) of the NEA to encourage creative approaches toward educational staffing. This

was done by designating certain school districts throughout the nation as demonstration centers instead of having the annual regional conferences.

The Grand Forks School District, chosen as a TEPS demonstration center, undertook a volunteer teacher-aide program as one of the many activities available to it. This program aroused such interest both locally and nationally that Dr. H. Edwin Cramer, at that time Superintendent of the Grand Forks Schools, decided that an attempt should be made to study systematically the utilization of teacher aides. Deciding that the availability of financial assistance for innovative solutions to educational programs through Title III of the Elementary and Secondary Education Act offered an exceptional opportunity, the Grand Forks School District submitted a proposal written by Dr. Harold Bergquist, entitled "Implementation of the Teacher and His Staff Concept."

The objectives of the experiment were fourfold:

1. The improvement of instruction through staff professionalization

2. The development of a viable model of staff utilization aimed at relieving problems deriving from limited teacher supply

3. The observation and evaluation of the potential of the average teacher to utilize supportive staff

4. The dissemination of the results of the experiment.

The U.S. Office of Education approved the project, and as a result of this challenge, the school people of Grand Forks dedicated themselves to the practical application of theory and experimentation over a three-year period.

The "teacher and his staff concept" is intended to convey the idea that the teacher, at his highest level of professionalism, is a teaching leader. The staff--an appropriate number of teacher aides, pupils and administrators from six schools in the Grand Forks Public School System--participated in the project. One junior high school and one elementary school in the city and one elementary school at Grand Forks Air Force Base were selected as experimental schools. Similarly, one junior high school and one elementary school in the city and the other elementary school at the Base served as control schools.

The experimental schools were provided with one teacher aide for each six teachers; the control schools received no aides. These experimental and control schools were paired on the basis of similarity of socio-economic circumstances, enrollment and the preparation-experience level of the teachers. During the second and third years of the experiment it was necessary to drop the control schools because of the spread of aide usage. Also, during the second and third years of project operation, three additional teacher aides were added to the experiment in the handicapped component.

The details of the growth of this project "The Implementation of the Teacher and His Staff," can be found in the various progress and continuation reports, listed in the dissemination section.

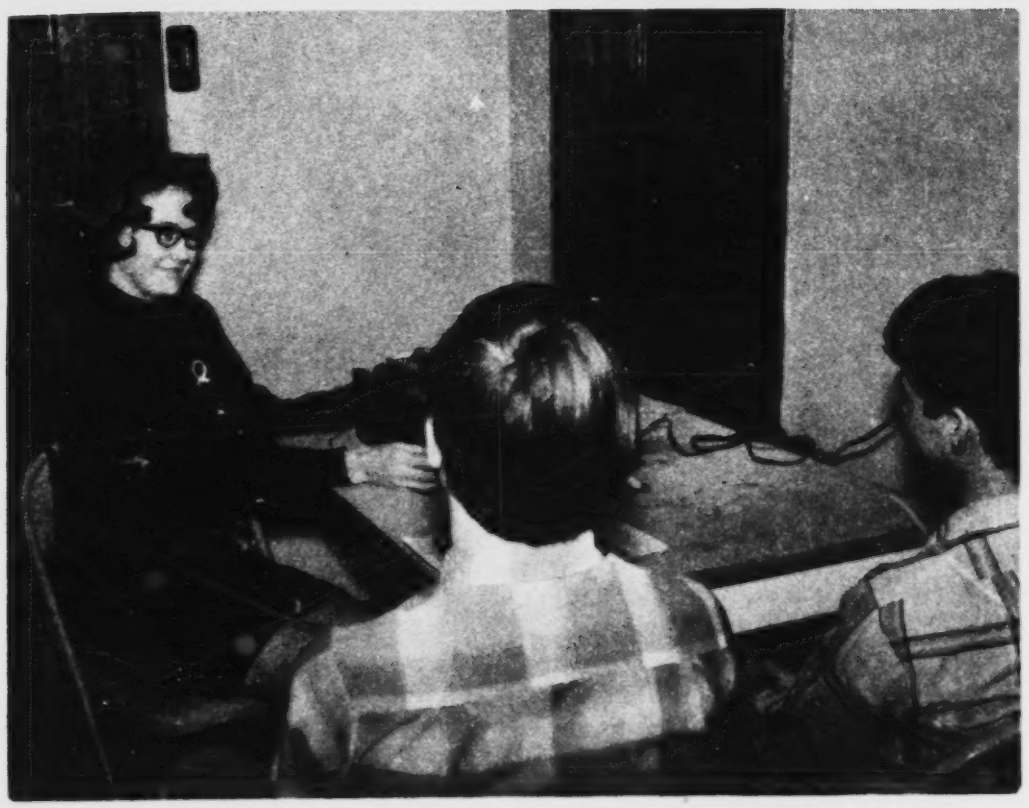
The subject of this booklet is the story, as told by our various staff members, of the impact of teacher aides on the Grand Forks School District and its instructional program.

- Margaret Abbott

PART I

We saw it happen

Individual Instruction



FLEXIBLE SCHEDULING

By Donald Mrdjenovich

The Grand Forks School system has accepted and made use of flexible scheduling at all levels, and this type of schedule is available to any local school which desires to use it. Although flexibility is a relative dimension that exists to some extent in most school programs in Grand Forks, the Red River High School schedule is flexible in the purest sense of the word. Time-block assignments give specific subject-area teaching teams the responsibility for groups of students, but the professional staff has great latitude in determining the size and composition of these learning groups. The staff may plan a large-group presentation, small-group discussions, individual conferences, or it may monitor independent study programs.

Students at Red River have access to a wide range of facilities, resources, and technology. This allows them to exercise their own discretion relative to the determination of appropriate place, time, or materials to pursue definite learning activities. Many of these activities are stated in behavioral terms and make extensive use of teaching contracts in the various subject areas.

The learning system at Schroeder Junior High can also, with some accuracy, be described as flexible, although the term "modular-flexible" may be a better description. This system provides for variable-sized learning groups--large, small, laboratory (30), and individual. Teacher teams working closely on an inter-departmental basis provide instruction. Unlike the Red River schedule, that at Schroeder repeats on a weekly basis. Although it is more easily altered than the so-called traditional schedule, it still has certain built-in time restrictions. In essence, the Schroeder schedule calls for variable-sized grouping, and its major contribution to improved learning opportunities is probably the provision for students to spend from 20 to 30 per cent of their time in directed, independent, learning activities. The independent aspect allows students to make decisions about how they can best meet their learning needs.

The variety of flexibly designed programs at the elementary level in the Grand Forks schools makes it impossible to give a detailed description of each of them in this report. It should be noted, however, that teacher "islands of continuous progress" exist and operate at all grade levels

and in several different schools in the district. Differential teaching teams, varied learning materials, and learning contracts are combined in these islands to produce a system that is extremely flexible. The teams, under the direction of team leaders, have almost complete autonomy in planning and carrying out the learning activities of the children assigned to them. The Vocational Core program, involving about 365 secondary students, operates with a similar format and philosophy.

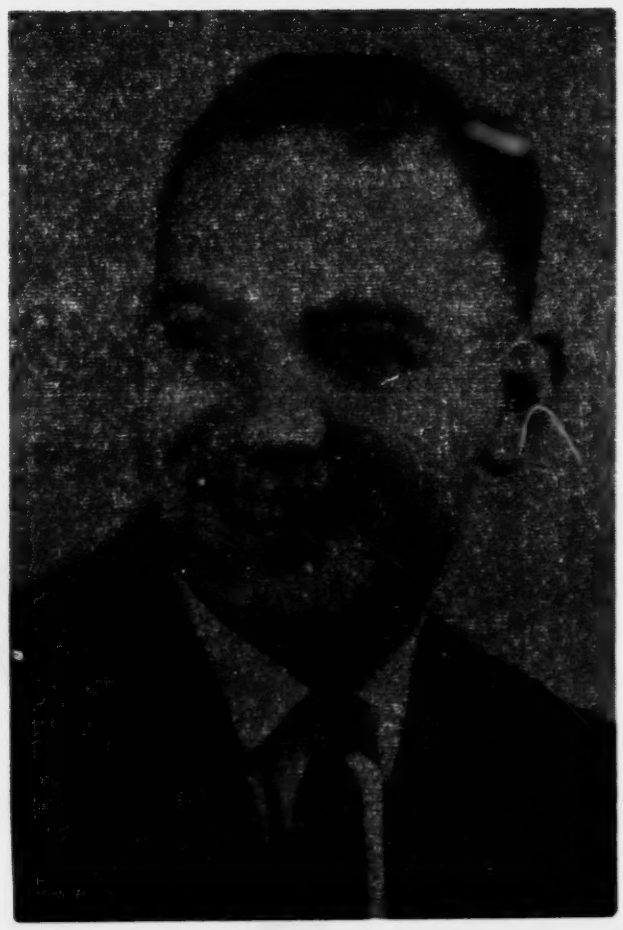
Throughout the school system several flexible programs operate quite effectively on a smaller scale. Many of them simply involve a "double classroom"--that is, an open area created by the removal of a common wall, made attractive by lighting and carpeting. Teachers and aides in the schools have been quite creative in their use of time, space, and materials in designing unique learning programs.

An elementary "island of continuous progress."

A new addition to Benjamin Franklin Elementary School was recently completed. This is an open area addition about the size of twelve traditional classrooms. One can only imagine what a creative professional staff will do with the space.

One important lesson remains to be learned: this is that flexibility is more than the wise use of space, time and learning materials. It must also exist in the human spirit if the limitations and barriers within the "traditional" educational system are to be removed.

Donald Mrdjenovich



THE GRAND FORKS CONTRACT SYSTEM

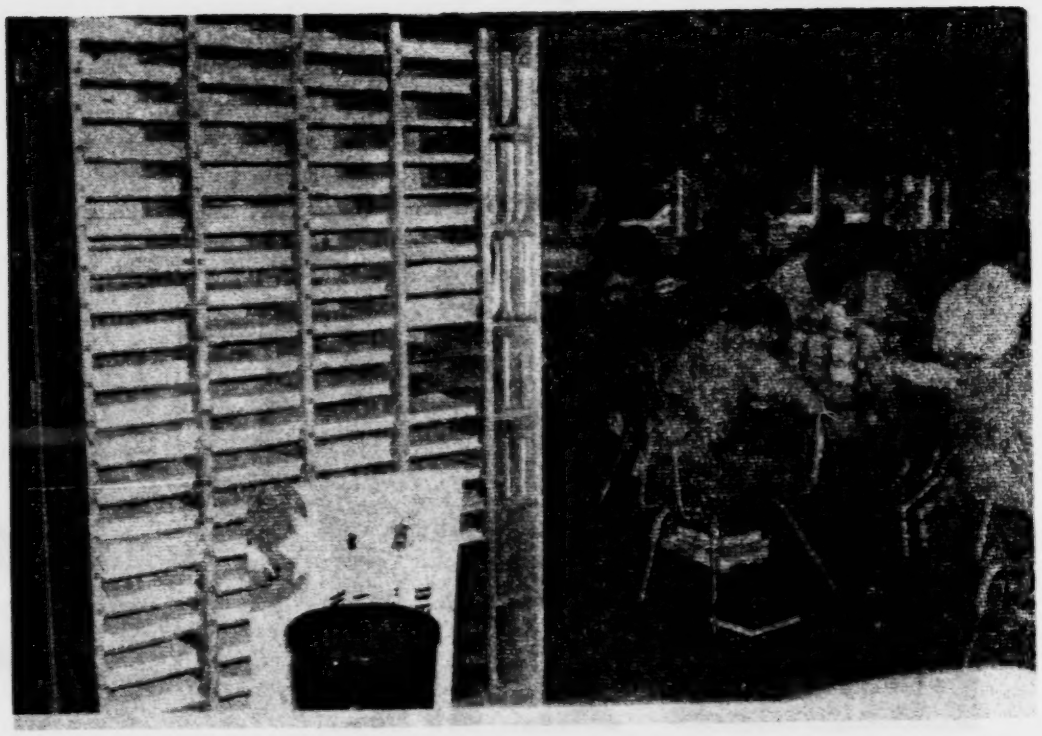
By Kenneth Sherwood

A major complaint about curriculum today is that it is too often dictated by editors of textbooks and learning materials. Many school systems, especially small or isolated ones, must rely exclusively on textbooks used in all types of school systems in every part of the country, which means that major curriculum decisions are made outside the local environment. Dependence upon an outside source for curriculum planning, which makes no allowance for local conditions, can create many problems in a school district. The textbooks authors or editors determine goals, limit student progress, and make no allowance for individualized instruction.

In an effort to escape this type of educational restriction and to make curriculum control a local matter, the Grand Forks School District has developed a contract package to be used as an instructional tool designed to fit the needs of the individual and to report student progress more accurately. The contract system is especially valuable in promoting individualized instruction. This does not mean teaching students individually but rather using the characteristics of each student to determine the selection of behavioral objectives, materials and procedures.

Pupil works on individualized instruction material.

A contract is a form of education primarily concerned with the diagnosis of and prescription for educational needs. The contract package is an attempt to allow the student, with the help of a teacher, to do a large part of the selection of appropriate materials, procedures, and time to achieve the behavioral objectives set forth by the teacher, the school, and the community. Each package has several instructional experiences to obtain the objective.



Contract storage in a math island.

Instructional experiences are set up to focus on a student's strengths. If a student learns by listening, then he should be allowed to listen as a learning experience. The package allows the student and/or the instructor to select the learning experience best suited to his needs. This type of multi-media approach is essential to the contract form of learning.

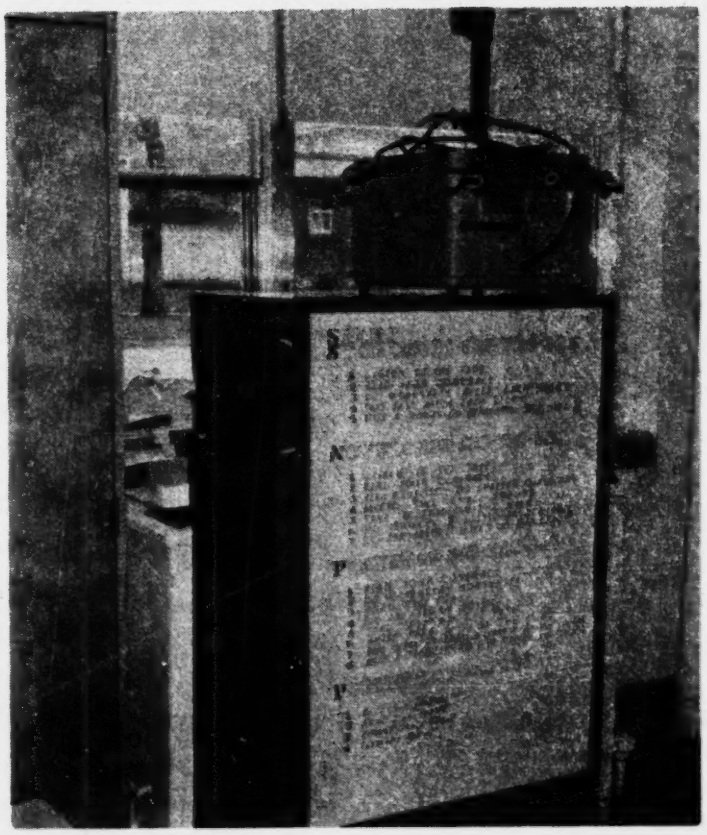
The implementation of a multi-media system required considerable research on the part of the contract authors. About ninety educational supply companies sent materials for examination by the contract authors.

revised, and rewritten. A multi-media system such as this must continue to build to keep pace with the explosion of knowledge which is the phenomenon of the era.

Contract guide in an English island.

From this number of companies well over 5,000 individual items of learning materials were available to the researchers when then reviewed, selected and compiled the materials into the contract packages.

The Grand Forks School District has over 2,900 contracts available in the grade levels K-12. All of these contracts were developed by teachers and administrators of the Grand Forks School system; they are not products of commercial companies, but they employ many commercial educational aides within the contract package.



Contracts available to pupils.

There are 13,464 pages of written material within the contract resource centers. These contract packages contain behavioral objectives, instructional experiences, pre-tests, check tests, and post-tests. The total value of these materials is estimated at $175,000.

The Grand Forks School District is well satisfied with the contract project as far as it has gone, with the realization that much remains to be accomplished. The contracts are continually being reviewed,

DIFFERENTIATED STAFFING: RATIONALE AND DISCUSSION

By Dr. Harold Bergquist

Almost everyone will agree that individual teachers differ in ability and energy. This truism is to be expected since individuals in other occupations--farming, retailing, transportation, or the professions--differ also. The strange fact is, however, that although all teachers are individuals, unique in themselves, they are expected to be identical in capability, desire, and accomplishment in the classroom, with the result that performances are often uneven and on different levels of professionalism. Some educators believe that differentiated staffing is the practice by which teaching can achieve a higher level of professionalism.

Historical Development

Members of the professional staff of the Grand Forks School District have engaged in team-teaching efforts for several years, so the implementation of differentiated staffing was a rather natural development. Successful operation by several informal differentiated staffing teams during the 1967-1968 school year led to the establishment of two formal differentiated staffing teams for the 1968-1969 school year. Once again, positive results brought about an expansion of the practice. In the 1969-1970 school year, the Grand Forks School District employed fourteen differentiated staffing teams, the configuration of which varied from three to eleven participants. At the present time the North Dakota Department of Public Instruction, the University of North Dakota Bureau of Educational Research, and the Grand Forks School District are cooperating in formal research to evaluate student achievement, teacher morale, and the cost utility of personnel in the program.

Discussion

Differentiated staffs can have several different characteristics. The Grand Forks School District established proportional staffing units (positions) to create instructional teams for specific situations. The contribution, job training requirements, staffing equivalency, instructional involvement, and compensation of each role is presented on the following page.

Position	Training	Staff (1) Equivalency	Instructional Involvement	School Year Salary
Volunteer Aide	None	0	Limited under supervising certified	
Clerical Aide	Typing ability (usually high school	.43	Incidental under supervising certified teacher	$2,295.00
Instructional Aide	Some college training	.50	Normal activity as an implementor of individual prescriptions	$2,430.00
Instructor	College trained certified teacher	.75	Normal activity as a full participant with certified staff. School day assignment only.	$5,000.00
Staff Teacher	B.A. (certified teacher)	1.00	Primary responsibility	Regular salary schedule.
Team Teacher	B.A. (usually M.A.+) experienced professional leadership ability diagnostic and prescriptive teacher for individual differences	1.25	Primary responsibility coupled with a democratic staff leadership and "trouble shooter" activity	Regular salary schedule plus a basic payment of $500 and payment of $1 per hour per year per child instructed by the team.

(1) Staff equivalency is a term coined by Grand Forks School District personnel. It provides for a ratio between positions. A regular classroom teacher (staff teacher) is given a staff equivalency of 1.00. All other positions are computed on a ratio which relates to this value: team leader, 1.25; instructor, .75; instructional aide, .50; clerical aide, .43; and volunteer aide, 0.

The staffing of a particular school can have numerous configurations since the staffing units can be organized creatively. For example, a Grand Forks elementary school with 540 students would normally have 20 teachers (27-1 pupil-teacher ratio). Using the staff equivalency ratio various staff designs might be organized such as:

Number of Adults	Role	Staff Equivalency	Total
4	Team Leader	1.25	5
8	Staff Teacher	1.00	8
4	Instructor	.75	3
4	Instructional Aide	.50	2
4	Clerical Aide	.43	1.72
24			19.72

In this example, rather than having 20 teachers in a traditional staffing pattern, the school would have 24 adults without having utilized its entitlement of 20 staff members. The potential combinations are, obviously, numerous.

Since financial considerations are significant to most school districts, an analyzation of the implications of such a staffing pattern may be valuable. By referring to the above tables and accepting the mean salary of staff teachers to be $8000, the reader will be able to comprehend this explanation of cost efficiency:

Regular Staffing

20 teachers with a mean salary of $8000.00 = $160,000 total staffing cost

Differentiated Staffing

4	team leaders --	37,420 --	each leader receives $8000 + 500 + 810 (135 pupils x $6.00 - $1.00 per hour per year per child)
8	staff teachers --	64,000 --	assumed mean salary $8000
4	instructors --	20,000 --	5,000 maximum salary
4	instructional aides	9,720 --	2,430 maximum salary
4	clerical aides --	9,180 --	2,295 maximum salary

Thus, in the illustration used, a school district using differentiated staffing would employ 24 adults for $140,140 rather than 20 adults for $160,000. This savings of $19,860 may have an attraction for districts where financial resources are limited. It should also be pointed out that the professional teacher-pupil ratio would remain at the tolerable level of 1:33.75 in this example. The initial savings of $19,860 would, obviously, allow satisfaction of unique district demands such as the employment of specialist teachers for slow learners or the employment of other staff members, the procurement of additional instructional materials, or the purchase of contemporary educational technology which might, in turn, free teachers for the actual professional duties of instruction.

GRAND FORKS SCHOOL DISTRICT TEAMS 1969-70

As stated above, the Grand Forks School District presently utilizes fourteen differentiated teams with various personnel configurations.

Three of these teams are described in the following table.

Twining School	Staff Ratio	Enrollment
Team Leader	1.25	144
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Instructor	.75	
Instructional Aide	.50	
Eielson School	**Staff Ratio**	**Enrollment**
Team Leader	1.25	210
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Instructor	.75	
Instructional Aide	.50	
Instructional Aide	.50	
Instructional Aide	.50	
Team Leader	1.25	220
Instructor	.75	

Eielson School (Cont.)	Staff Ratio	Enrollment
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Staff Teacher	1	
Instructional Aide	.50	
Instructional Aide	.50	
Clerical Aide	.43	

SUBJECTIVE EVALUATION

A listing of negative and positive observations relative to differentiated staffing include:

Negative Considerations

1. Great care must be exercised in selecting staff members who are compatible.

2. Personnel records become more complex and administrative activities generally become more difficult to accomplish.

3. Some students may be over-awed by the numbers of persons with whom interaction occurs. The "my teacher" phenomenon may be replaced by a "my teacher aide" phenomenon.

4. Since more staff interaction occurs, it becomes more difficult to "hide" an incompetent, disinterested, or low-energy staff member. Differentiated staffing tends to expose staff member weaknesses.

5. Differentiation in salaries and authority may cause jealousies to develop between staff members.

6. Differentiation of staff becomes more difficult in small departments of secondary schools (i.e. Spanish) and small schools with very limited staff membership.

Positive Considerations

1. Individual teacher competencies can be more efficiently utilized.

2. Individual teacher weaknesses can be compensated for by other staff members.

3. The incidence of pupil-teacher personality clashes is reduced. Students are more likely to identify a particular staff member with whom they can relate.

4. Since teachers are better able to specialize and work in subject areas of greatest interest, instruction seems to become more exciting and meaningful.

5. Equipment and materials can be shared by larger numbers of staff members and students without a loss of transportation or student movement time.

6. Since peer-group observation is constant, the incidence of teachers and students reacting very emotionally is reduced. Extreme outbursts of anger, for example, seem not to occur.

7. The teacher aides or paraprofessional personnel often relate better to children of a particular socio-economic group. Hence these staff members may more effectively perform some teaching activities than the more highly compensated staff members.

8. Staff members have opportunities to grow professionally. The interaction of staff members provides constant opportunity to observe professional techniques. A new staff member does not have to "go it alone."

9. Opportunities exist for professional advancement for those who wish to remain in the classroom. Historically, teachers who sought professional advancement found it necessary to leave the elementary or secondary classroom for college teaching, administration, or an educational specialty.

10. The talents of highly competent persons can be secured in less than professional roles. The college-trained housewife, for example, who wishes employment will often choose an aide role rather than the more demanding role of staff teacher.

11. Professional recruitment becomes a natural consequence as aides are exposed to the opportunities and rewards of professional education.

Considered in totality, differentiated staffing suggests a potential in education which it has already achieved in several other occupations. Whether it achieves a wide implementation depends not only on its instructional impact, which appears positive, but also on the vision of the citizenry and the industrial union-oriented element in the ranks of contemporary teachers. If differentiated staffing is to be extended, the citizenry must become willing to compensate classroom-involved educators with salaries which compete with earnings in other professions such as medicine and school administration. Furthermore, teachers must become willing to sacrifice the "security of the pack", as perpetuated by single salary schedules, for more closely evaluated roles which expose both mediocrity and competence.

Harold Bergquist

VOCATIONAL CORE

By Robert Johnston

Vocational education in the Grand Forks Public School System received great impetus for growth in 1968 with the appointment of Jack Gableman as vocational director. Mr. Gableman and those concerned with the development of this field decided that there ought to be some relationship of vocational subjects with English and social studies, since evidence existed that weakness in these two latter subject areas led to dropouts in the Grand Forks Public Schools.

Instructor and pupil discuss a problem.

The philosophy of vocational core is predicated on the concept that all students in the community should be given opportunity for a quality education based on their individual needs and interests, but these do not necessarily include preparation for a four-year college. Most educators believe that subject matter can best be learned if it is made relevant to the students' needs and interests; therefore, correlation of

English and social studies with their chosen vocation should provide motivation that these students do not normally find in the academic subjects. The validity of this theory has already been demonstrated in the changes manifested by the individual in this learning situation. Many of our students have had little previous experience of personal achievement in school, but because of the nature of the new core program, these students are now achieving a level of non-competitive success. As a result, many have already shown a recognizably better attitude toward school and learning in general, as well as maturity in the decision-making process.

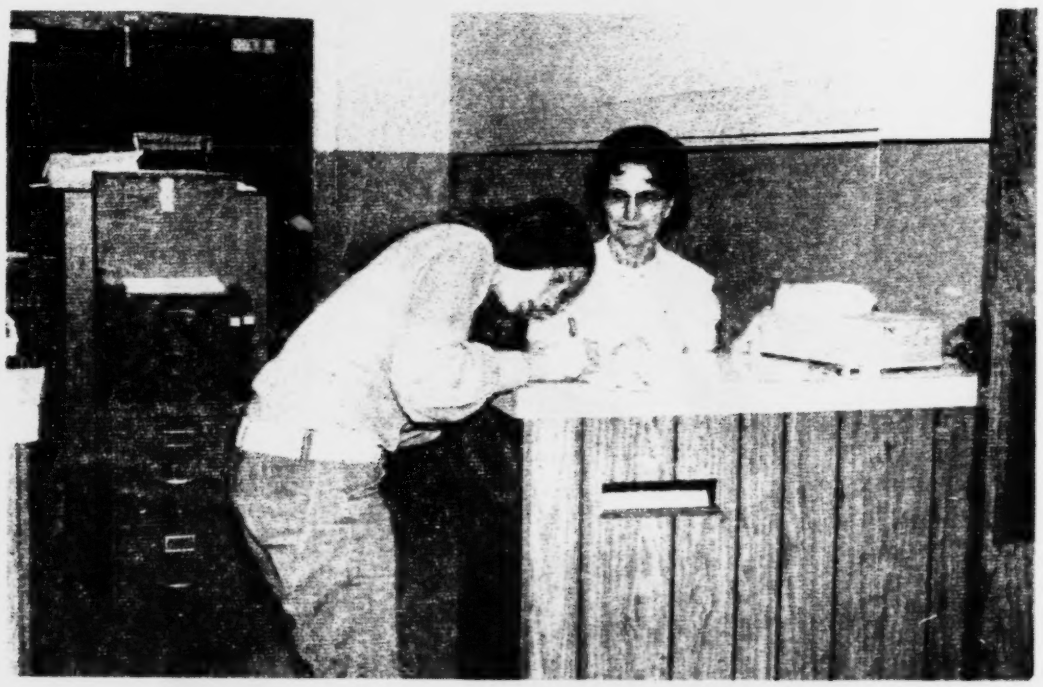
The core program, as implemented in the Grand Forks Public Schools, consists of three units of two-hour blocks of time. The time periods are as follows:

8:00 to 10:00
10:00 to 12:00
1:30 to 3:30

The 10:00 to 12:00 block is limited to sophomores. The 8:00 to 10:00 group is a combination of juniors and seniors who have proved themselves capable of individualized self-pacing instruction. The 1:30 to 3:30 group is composed of those students who have greater learning problems and have not yet adapted themselves to individualized instruction. Any student in the vocational core must be enrolled either in pre-vocational subjects or in a trades and industry course as well as the vocational core. Registration for the core is entirely voluntary. No one is forced to be in the core; no one is forced to stay in the core. It is not a dumping ground for academic or emotional problems. It is a voluntary and rather selective group of pupils who have difficulty with traditional academic subjects. The vocational core, however, has available all of the materials that would be normally used in a regular classroom as well as auxiliary materials which can meet the students' needs from a fourth-grade through a twelfth-grade reading level.

The resource center is the heart of the program. A full-time teacher aide is assisted by members of Future Teachers of America, working during school hours, and National Youth Corps students help with the clerical work after school. All materials that the students need in the core are kept in the resource center. These include approximately 40 different textbooks, 350 paperbacks, 100 cassette audio-tapes with filmstrips, about 50 filmstrips and 60 prepared video-tapes

that have been recorded from network television. Also in the resource center there is a testing table. Students who complete their work can come in after having their work approved and take a test individually at their own rate when they are ready for it.



A teacher aide assists in the resource center.

The work of the vocational core student is divided into two categories: 1. contracts 2. activities. The contracts, prepared during two summer sessions by the core instructors, include approximately 450 core contracts covering three levels of English and three levels of social studies including U.S. history, world history, government, economics, social problems, consumer math and consumer economics, literature, grammar and speech. Also provided are specific technical contracts and all of the English and social studies contracts written in the Summer Curriculum Development Project. The extent of the contract materials is extremely large, more than any student could possibly complete in a three-year period.

Contracts comprise approximately one-half of the student's work.

Making up the other half is a list of twenty-one different activities that a student can do in order to obtain activity credit. The choice of activities, which is on a voluntary basis, includes a free-reading program, and a free-writing program. The students can pick a topic that he would like to read about or write about. This may be in the form of poetry, short stories, or whatever interests the student. He can watch films for his activity credit.

A pupil works on a contract.

Approximately ten films a week in the vocational core are requisitioned from free sources as well as from the Grand Forks film library. Sixty video-tapes which include educational programs, playhouse productions, and special reports have been pre-recorded from network television. The students may pick and choose as they so desire. The activities also include community projects whereby the students make arrangements to observe tradesman on the job for two days. The purpose is not only to get to know what the job is about but to get to know what kind of people are involved in that type of work.

The pupil may also participate in projects. A typical example of a project in vocational core was the building of furniture for the core

laboratory. Even though this facility included good carpet, acoustical tile and lighting there were no funds available to furnish it, so the students built their own furniture including contract shelves, study carrels and a listening station.

One of the most important of the activities was the small-group discussion. Attempts were made to have many small-group discussions in order to afford the student an opportunity to express his ideas and interact with other persons, not only his peers but also faculty members.

A small-group discussion.

These small-group discussions did not necessarily correlate with any of the English and social studies work and were on a voluntary basis. They covered a wide range of subjects depending upon the interest of the discussion group that was involved.

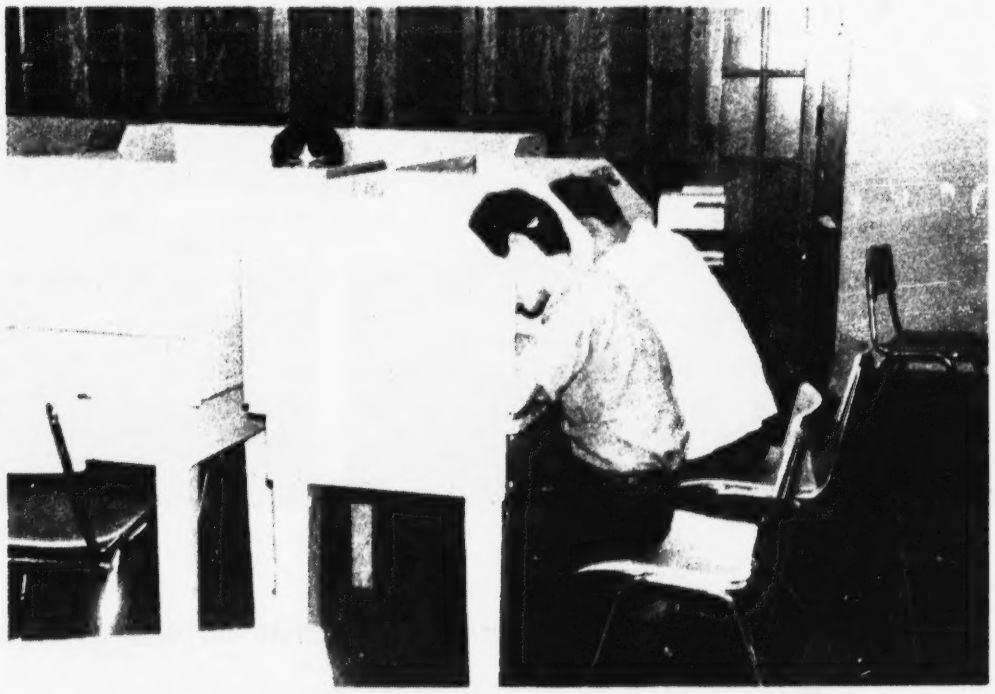
The student may also write vocational and occupational reports for activity credit. He may pick a topic and follow a format that has been devised specifically for the vocational core. The reports do not take

the form of a term paper but a series of questions which may be answered by cutting out magazine articles and using them as references or including them in the report. The pupil then develops a summary and conclusion.

Surveys and interviews are also allowable as an activity for vocational core students. They team in groups of two or three to develop their survey, distribute it in the school or community and draw conclusions regarding their questions. In the interviews, they generally interview individuals in the community about a specific topic or one specific question.

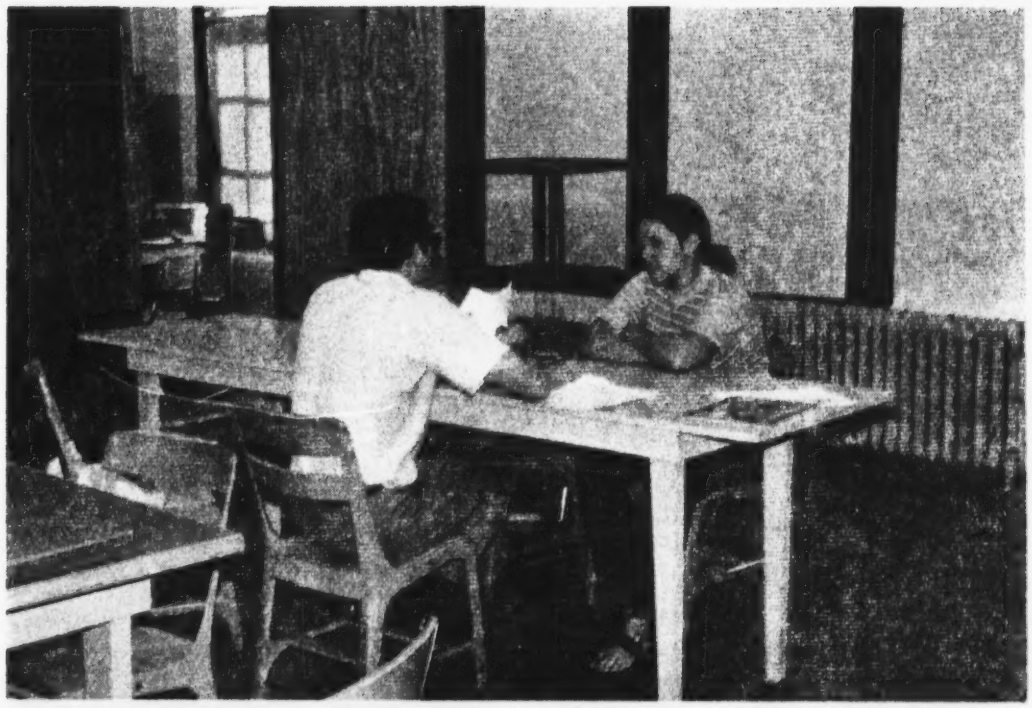
The activities also include writing reports on current television programs and current movies which are either seen over the network or in the community. Also allowable for activities are guest lectures and teacher lectures which are also on a voluntary basis. No student is required to participate in any given activity if he does not so desire; however, at the end of the week or semester he must have accumulated so much credit for activities. The basis for giving credit for activities is not necessarily a quality basis but is determined by the amount of time the student has worked on the activity. It is very difficult, with all of the activities available, to make objective tests. It would be foolish to attempt to do so. Therefore the time element is used as the criterion. If the student is exposed to a guest lecturer for one hour he will by simply listening to him probably get as much out of it, if the lecturer is interesting, as he would by taking notes and taking a test. If he views a film downtown, there will be an inherent interest in that film which will not require the student to take notes by threatening him with a test. The contracts, on the other hand, do have the built-in negative controls, of forcing students to take a test and forcing them to pass it. In this way they are not toally without any testing or evaluating. It is important to point out another evaluating procedure in which the quality of the student's activities is determined--that is by interaction with the instructor. The quality of contract work is determined by this interaction and not necessarily by the tests. At the completion of every contract, the student must bring the contract to an instructor for a discussion of all of the behavioral objectives. Only if the instructor is satisfied that the student has mastered those behavioral objectives will he be allowed to take the test. The mastery of those objectives however, may come in the form of on-the-spot instructor discussion, or the instructor may have the student review the contract, or have

him do some other work related to that contract. In this way there are some subjective critiques of each student on every bit of work that that student does.



Core pupils study in carrel area.

The ten hours required in the core program are divided approximately into four and one-half hours of activities; four and one-half hours of contracts; and approximately one hour of socializing. The contracts written expressly for the vocational core differ from many of the contracts in the school system in that they do not require the dependence of the student upon anyone or anything except his own ability to go ahead and complete that contract. If interaction occurs, it is because he needs assistance. Every contract written for vocational core has a read-along tape with it. Those who have reading difficulty, can slip a cassette tape into a tape recorder and then listen to what is being read and read along with it. In this way, difficulties caused by poor reading ability can be reduced. All contracts require the student to listen to at least one audio cassette, and to view one film strip. Most contracts have a work sheet and some type of creative excercise such as writing a letter to a Congressman, creating a series of cartoons, or other activities of this nature.

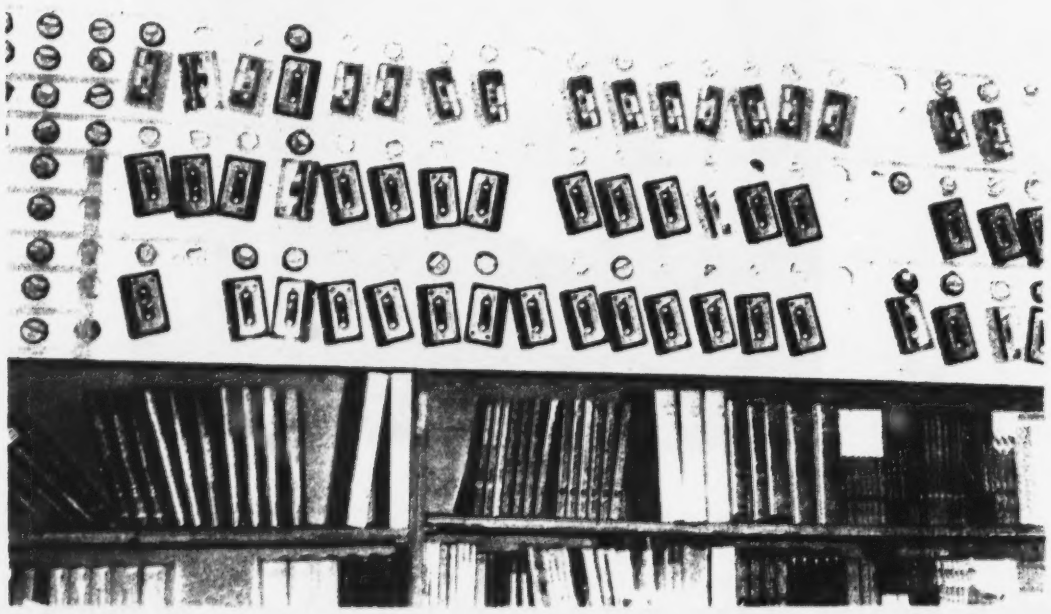


Teacher and pupil discuss behavioral objectives.

Requirements are arranged so that a normal "C" student in the core program can complete his four and one-half hours of activities and four and one-half hours of contracts and one hour of socializing during the class period. Therefore, if he is a normal "C" student, the student should have no difficulty in completing his work during class; however, if he wants to get an "A" or "B" grade he will have to spend more time on his core work. If he chooses to receive only a "D" he can put in less time. It is necessary to point out at this time that all grading is done by the student himself. He contracts for a grade. If he contracts for a "C" he is required to earn sixty points in activities a week and fifty points in contracts. It becomes progressively more difficult if he wants a "B" or "A", and somewhat easier if this student wants a "D." The important thing is that he selects his own grade and "bites off" the amount of work that he cares to "chew" during the course of the nine weeks or semester. He then has the prerogative of choosing what that work will be, the activities he wants to engage in, as well as which contracts he wants to do. The final point total is the only requirement. The student must pick and choose those contracts in

which he is interested in order to complete his contract requirement.

This program is one of continuous progress: once the student selects the grade that he wants, he progresses toward that grade without any restrictions by anyone in the program toward the completion of that requirement. Once he has completed that step, he moves into his next semester's work. If a senior completes the second semester of his core requirement, he is then relieved of any responsibility toward core and has earned the six credits that are possible in core. He is released from the program to go into another T & I subject if one is available. Perhaps he enters a vocational school at an earlier date than would normally be possible, or he devotes more time to his job. It must be pointed out that most of our core students have part-time jobs. Many of them are working full eight-hour shifts. There is an example of one student in core who is making over $130.00 a week holding down three jobs as well as going to school full time and has been doing so all year.

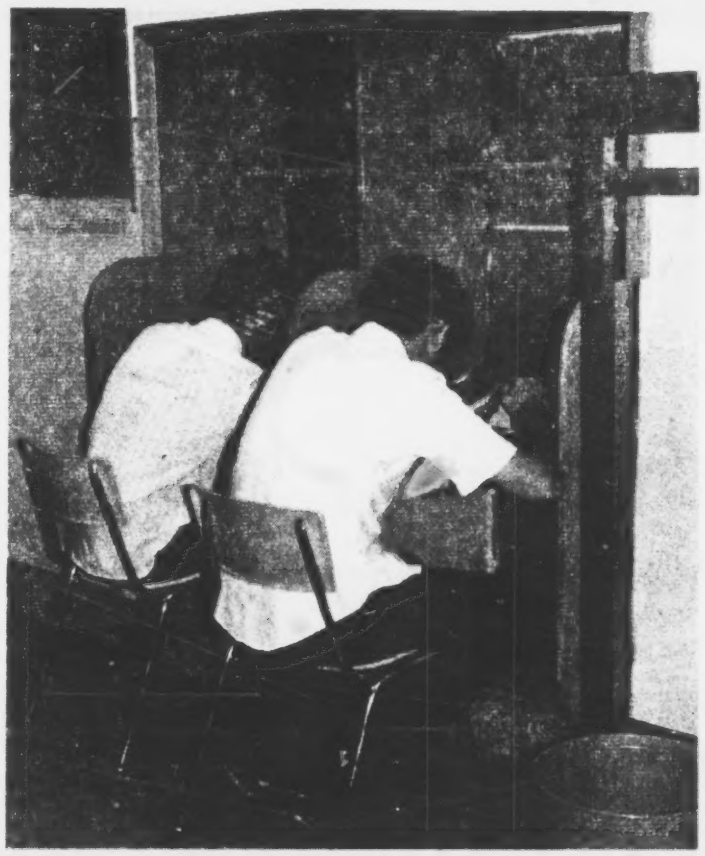


A wall in the resource center.

One of the important aspects of vocational core that differentiates it from other programs or from traditional classrooms, is the extensive use of audio-visual materials. In addition to video-tapes, with

three video-tape decks, the available equipment includes a pack camera and a regular camera. The latter is used for speeches, and the porta-pack camera is used by students who go out to make surveys of different facilities or different situations in the community. It is also used to video-tape and record the facilities at vocational schools which students may then view in making up their mind about which vocational school they plan to attend.

There is extensive use of study carrels in the resource area. Pupils can listen to audio-tapes and view film strips at their own discretion; a dial-access machine which plays pre-recorded audio tapes is also available to them.



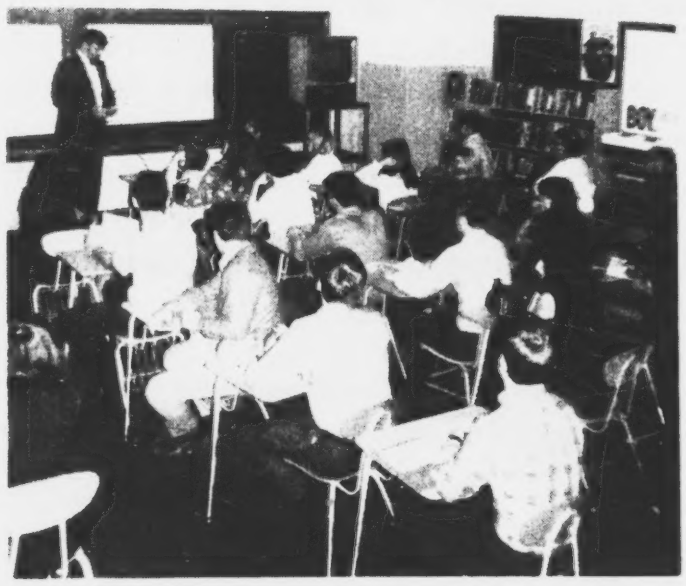
Core pupils study individually.

At the beginning of the year each of the 220 core students is instructed in the use of the video-tape, film projector and audio-tape cassettes and film-strip projectors so that each student can operate them by himself. Every student in the program can operate all of the machinery available. The facility used for vocational core consists of a double classroom with a bi-fold door, a converted hallway and a partial classroom. The largest group in the core program has eighty pupils. A

partial classroom provides a completely quiet study area. In the large area, moving around, talking, eating candy and general independence of action and movement is allowed. Students may use an office area for small, group discussions and a partitioned area as a film theatre where video-tapes and films can be viewed.

Two full-time faculty members and one full-time teacher aide serve as staff for an enrollment of about 220 students in the core program. The efficiency of two full-time faculty members with the assistance of one clerical aide has been demonstrated as making better use of money than to have a greater number of faculty members. The program also utilizes student-teachers very effectively. An agreement with the University provides two student-teachers in the morning and two in the afternoon.

Student-teachers as well as the clerical aide play a very vital role in the success of the vocational core program.



A large group meets.

The cost of the vocational core is great at the beginning. Under the continuous progress islands of instruction we received $50.00 per student above the amount normally expended for students; however,

this should be considered a fixed cost and over the period of ten years will amount to $5.00 expenditure per student which is extremely minimal. The materials purchased have a life expectancy of at least ten years or more.

The factor of greatest importance in the core program is that of guidance. Two guidance counselors work with the core pupils, one specifically as a vocational guidance counselor. However, guidance is not limited to the professionally trained guidance counselor. Everybody in the program, including the student teachers, must be guidance oriented. As members of the core program, students have a tendency to be much more open and develop greater rapport with the faculty members than before. This rapport allows an open exchange of ideas, as well as an understanding of needs and the thorough exploration of problems. If there is any kind of background that a teacher should possess for the vocational core program, it is one which permits the development of a healthy relationship with students.

In summary, the vocational core program is not some wild-eyed idealistically radical approach to education. It is simply the amalgamation of that which was good in the traditional setting with the application of that which is good in terms of theory and practice, in the new movement of education. This amalgamation results in a more humane education--an education that meets students where they are and now where a faculty member might want them to be. For this reason, the response to the vocational core program has been very positive on the part of the students. The program is voluntary and very few students transfer out of core; rather, core has a waiting list of students trying to get in. Because of the program the school's dropout rate has been cut dramatically. Estimates at this time indicate as much as a one-third decrease in the dropout rate.

The Grand Forks Core program is not perfect; it does not have all of the answers. But results to date make it appear to be a step in the right direction.

TRAINING TEACHER AIDES

By Margaret Abbott

The use of teacher aides is an important step forward in making the teacher's job more manageable. The complexity of modern teaching, however, makes it imperative that school staffs play a part in the preparation of teacher aides if schools are to gain from the aides the needed support.

There must be pre-service training of aides to develop communication skills and other concrete skills, as well as the basic understandings needed for success during the first work experience, thus bolstering self-confidence and encouraging further effort.

Last summer (1969) the Grand Forks School System through an EPDA-B2 training grant participated in a first teacher-aide training program; this summer (1970) a second training program was held.

Working with a teacher aide means positive changes in the professional life of a teacher. The teacher will spend less time with routine matters--less checking class attendance, less correcting of objective type test papers, less collecting forms and money, and less preparing of audio-visual materials.

Having an aide will upgrade the teaching role and increase effectiveness. There will be a preparation of purely professional materials on a broader basis. There will be more time to guide and instruct individual students or to plan special remedial exercises for small groups. There will be more time to think, to be creative, to diagnose--in a word, to teach!

In order to achieve this goal, well trained aides are one necessary ingredient. Another is related to the normal attitude of many people toward change. Teachers and administrators are sometimes reluctant to adopt new methods because they interpret them as a psychological threat to security. Conventional facilities and methods are safe and comfortable. This resistance to change must be taken into account when attempts are made to introduce new procedures in teaching, better forms of school organization or different ways of using the talents and resources available.

Patience, resourcefulness and understanding are required. Teachers will always give their full cooperation when they appreciate that the recommended approaches are significant and worthwhile. Trained aides will

help assure this second necessary ingredient--willing, cooperative and enthusiastic teachers. Aides can be successful and helpful only if teachers allow them to be.

The aides trained in the Grand Forks program were recruited through letters to school districts in North Dakota, through news articles, and through an advertisement in the local paper.

The criteria for the selection of aides, varied with the nature of the positions to be filled. These criteria included such qualities as:

Emotional Stability
Fondness for Children
Positive Attitude
Enthusiasm
Ability to work with children
Some previous experience with children
Good health
No ethnic prejudice
Specific skills and talents
Typing ability if possible

(In regard to clerical assistants competency in typing ability was a must.)

An important phase of the selection was a personal interview with an administrator of the participating school district. Through informal conversation and questioning the trainee's personal qualifications manifested themselves.

The instructional staff consisted of administrators, teachers, and aides. These were all people who had been involved with aides during the two years of their use in the Grand Forks schools.

The content of the first aide training program is given briefly as follows:

The School System: organization and how it functions.
Important phase, 200 words of "educational vocabulary."

Subject Matter:
Elementary Math
Elementary Science
Elementary Social Studies
Elementary Reading

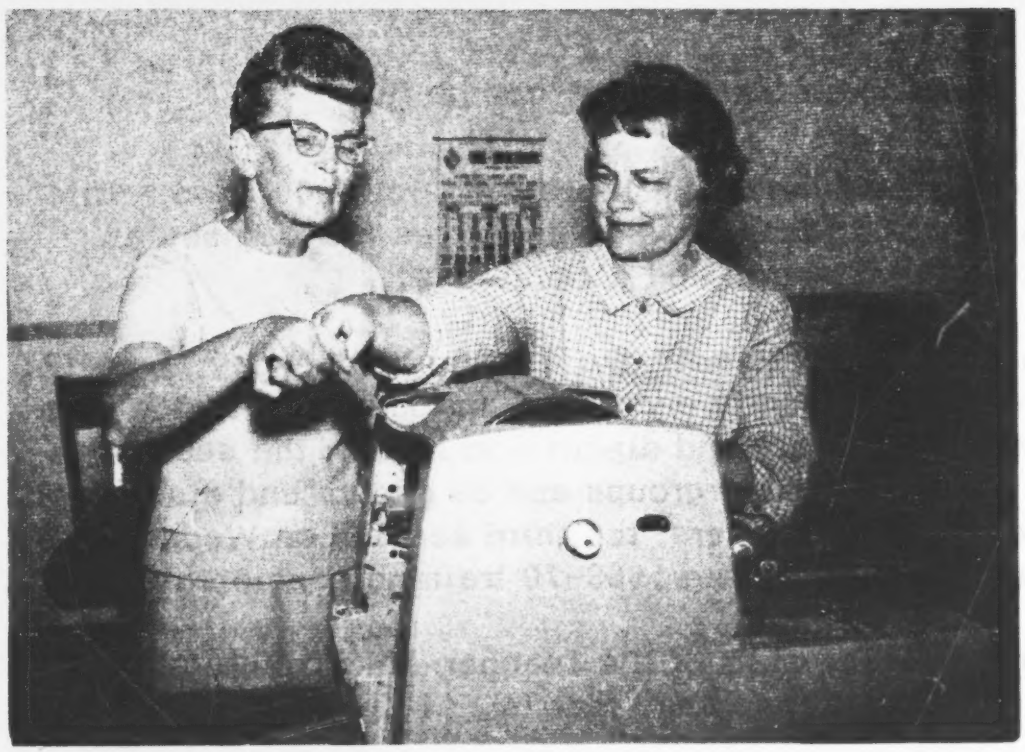
Secondary Math
Secondary Science
Secondary Social Studies
Secondary Language Arts

Library: to teach skills necessary to use a library effectively.

Audio Visual: how to operate all the school equipment--prepare materials.

Aide Routine: how to make out attendance slips, registers, lunch money records, report cards, pupil textbook cards, bulletin boards permanent record folders, admission slips; how to correct papers, tests, and workbooks; how to conduct a conference; special duties such as: door, hall, noon, hot-lunch count, selling tickets, first aid, field trips.

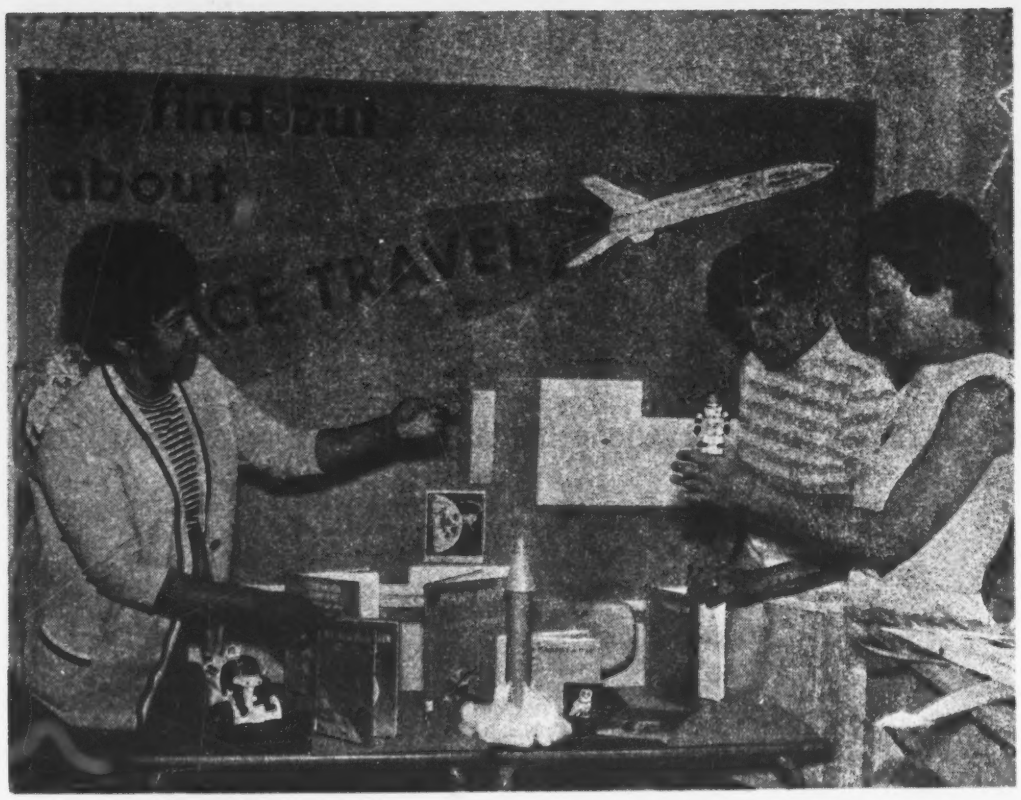
Professional skills: recognizing problems; behavior difficulties; testing skills.



An aide learns the clerical job.

Professional Techniques: staffing patterns; instruction techniques; teacher-aide planning; conferences.

Clerical Skills: school forms; good office practices; work habits; personal attributes; school ethics; skills and proficiency.



Aides learn that science can be fun.

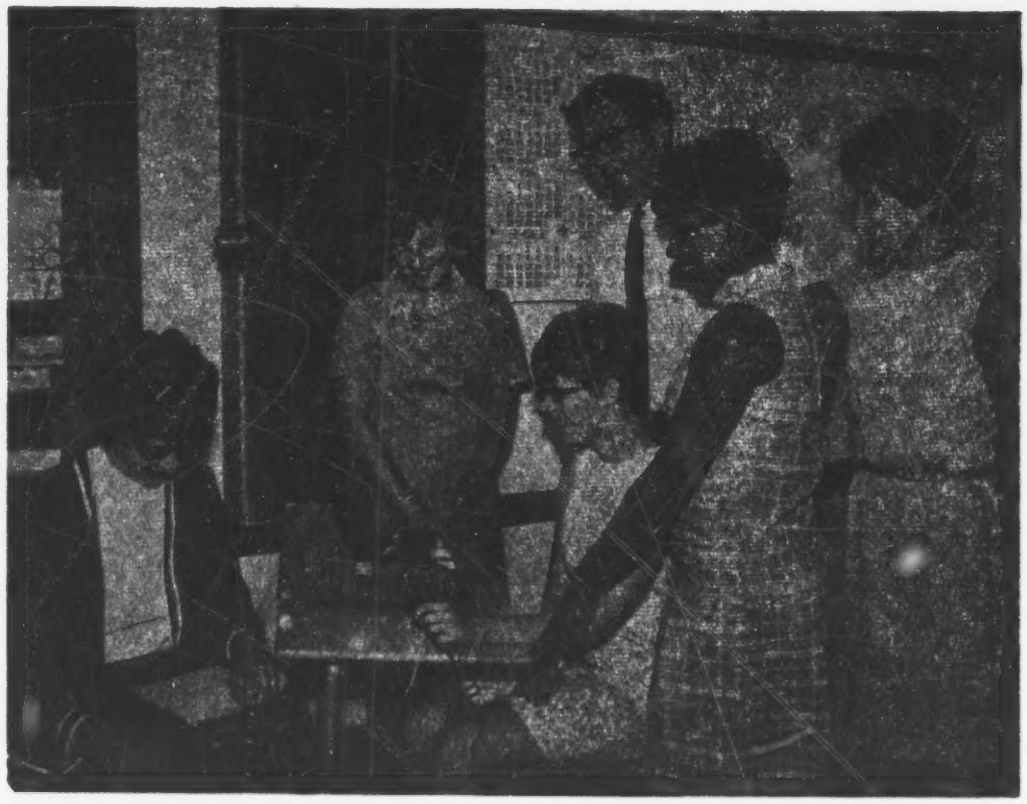
The aides eat together each day from 11:00 a.m. to 12:00 noon. This time is called an "eat and idea" session and gives the trainees an opportunity to exchange thoughts and conclusions.

Three discussion sessions were set: the first on Wednesday, June 17, with three groups of aides, ten in each, and an experienced aide from the 1968-69 session as a guest and discussion leader; the second on Friday, June 19, again with three groups and as guests and discussion leaders, three experienced teachers; the third session on Wednesday, June 24, with the instructors of the 1969-70 training session as guests.

For instruction purposes the staff of the Teacher-Aide Training Program used the threefold nature of teaching, that is: (1) pre-assessment;

(2) learning activities, for the student aides, perceive, think and try; for the teacher, show, discuss, and apply; (3) evaluation. For many of the classes contracts with behavioral objectives were used. Several of the instructors used field trips and action projects. The most important qualities imparted to the trainees by the instructors were enthusiasm, excitement, and a desire to serve.

The training schedule was set up so that each aide was assigned to a group and certain classes; however, the time was flexible in that the trainees were free to attend areas other than those assigned. The clerical, audio-visual, and library instructors were scheduled two to three extra hours each day in order to work with those aides who felt the need of extra or more intensive training in these areas.



Audio Visual a popular subject.

The aides received practical experience by working with the high school summer school being conducted in the same building as the teacher-aide training session.

In order to make this training as significant and down-to-earth as possible, the consultants were hired by the instructors themselves. In most instances experienced teachers and experienced aides were chosen as consultants. Basic to the success of aide training is the practice of permitting the instructors to share in appropriate decision-making. It is necessary to remember too that educating and training aides is only part of the plan. The users - teachers - need to agree that aides are an integral part of teaching. They must agree in joint planning, joint evaluation, joint pooling of strengths and abilities. If all can accept this practice then we have indeed taken that important step forward to make the teaching job more manageable.

Joint planning - teacher and aides

IN-SERVICE TRAINING

By Warren Loberg

Perhaps the most important single factor in the preparation of modular flexible scheduling for South Junior High School in the school year 1970-71 has been the benefits derived from having the Title III, Teacher and His Staff program at South Junior.

Without the financial aid for added equipment, supplies, materials, travel, and the aides themselves, this junior high would not have been in a position to move toward flexible scheduling as quickly as it has during these last three years.

I. TRAVEL

Perhaps of all the items previously mentioned, the one factor that helped more than any of the others has been the travel allowance. Visits to other schools by the South staff in the past three years have really helped change and shape attitudes. The staff has visited schools in New York, Kansas, Minnesota, Missouri, Washington, D.C., South Dakota, Colorado, Wisconsin, as well as schools within North Dakota. Not only has the South staff visited with teachers and staffs at these schools, but teachers from other parts of the United States have visited the Grand Forks School District because of the Title III program. The mutual benefits derived from these visitations are many: the staff members have become better informed, less apprehensive to change, and more open-minded about many programs or types of instruction. At least they all seem to realize that there are many ways of achieving instructional goals, and that perhaps one or another is not necessarily the best type or kind of instructional program yet devised.

II. EQUIPMENT

Each year, under the Title III program, the budget allowed for equipment that was purchased for South Junior High, which of course, is always welcome and in all cases it served a definite need. Most of this equipment was audio-visual, which in itself is useless unless it is used in a correct manner. Our audio-visual coordinator

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at South Junior demonstrated the use of this equipment, when necessary, to all staff members to insure proper handling and correct techniques of presentation.

III. MATERIALS AND SUPPLIES

The value of materials and teaching supplies that South Junior received under this Title III program can never be truly evaluated. The exact sum in dollars and cents can be listed, but it is impossible to equate the educational value with the financial outlay.

South staff members have certainly been able to try new methods and approaches. They have always used materials that they believed to be the best suited to the task at hand. To evaluate changes in teaching techniques is not easy, but as a general statement, many changes certainly have taken place over the past three years at South Junior High School.

IV. AIDES

The history of the teacher-aide program at South is relatively simple. The first year the staff used aides very reluctantly, some teachers using them more than the others, but all with reservations. The next year, the staff started experimentation in the use of aides. This year, the third, the only problem is the feeling that the aide will some day replace the qualified instructor. However, the aides have been more fully utilized, used for many different instructional tasks, and it has been the best year for the entire program. The in-service value of aides to the entire staff has been enormous. The staff recognizes the value of the aides, and has changed its basic attitude from one of indifference to one that conceded that aides are important to any good type of instruction. Members concur that they themselves have changed many of their instructional techniques better to utilize teacher aides and, lastly, they feel more comfortable in the presence of aides in the classroom today than they did three years ago.

In summary, the program at South Junior High School, Title III, Teacher and His Staff, has been extremely successful and very beneficial to the school and to the school district. It has given

generously of materials, supplies, equipment and aides, and as a result the staff has greatly benefited from these contributions. But perhaps more than anything else, the program has helped to change attitudes or at least to motivate the staff members to the understanding that they have not always wanted to understand other attitudes which did not fully agree with their own.

Pupils work together on creative project

IN-SERVICE TRAINING

By Harold Bergquist

The ESEA Title III Project, "The Implementation of the Teacher and His Staff Concept," has been a significant factor in changing the methodology of in-service training in the Grand Forks School District. Historically, teachers have taught as they were taught. The tendency of such practice to promote stagnation and obsolescence in an otherwise dynamic society is apparent. This Project has been a force to displace the redundancy of educational methodology described above.

As the Grand Forks School District professional staff developed techniques of individual instruction to replace group instruction, it became obvious that in-service training of the instructional staff was also obsolete. Consequently, different modes of in-service activities were organized.

In several instances, entire staffs became involved in prolonged in-service programs which were designed to increase the individuality of staff members and to provide self-enhancement experiences. Staff members were provided unlimited professional materials and opportunity to visit District school settings, attend conferences, and observe educational practices nation-wide. The result was readily apparent. Regular instructional personnel developed the expertise to interact with the District's formal educational leaders. Rather than being "talked to", instructional personnel "talked with" the District's educational leaders (as defined by role). This in-service became more continuous in both formal and informal settings.

The new awareness of learning process, which was achieved by many Grand Forks School District staff members, led to demands that in-service education become individualized and relevant. Consequently, during the 1969-70 school year, members of the teaching staff developed a sophisticated learning program for their peers. This program utilized behavioral objectives to state the desired outcome of the effort. It also utilized a contract method of learning whereby teachers could demonstrate proficiency by satisfactory completion of a pre-test; and, thereby, avoid the necessity of completing related instructional experiences.

This practice of using individualized instruction to teach how to individualize instruction represents the ultimate, in this writer's opinion, of in-service education as it is currently practiced in American education.

The Project has, in summary, provided that bit of capital resource needed to permit a vigorous staff to become dynamic and vanguard in a restive National society.

EVALUATION IMPLICATIONS

By John Thompson

The research component of the Implementation of the Teacher and His Staff Concept was concerned with attempting to evaluate the function of aides as agents for change in the schools in which they worked. Aides were, in a sense, an unknown quantity in the educational structure of schools in North Dakota. Prior to the inception of the study, many teachers appeared apprehensive about the value of aides in classrooms. One of the thrusts of the research was to compare perceptions of teachers who worked with aides against a similar group who did not, or could not, utilize aides, and to determine whether the experimental group changed after using aides. Another thrust of the research dealt with the question of probable change in cognitive growth of students when aides were present. The researchers applied cost/utility techniques to evaluate the economic benefits which might accrue to a school as a result of using aides. A final thrust of the evaluation was to look at the perceived impact of aides in terms of referent groups other than teachers.

The research findings of the project are reported in three yearly research reports, and are available to those who have a particular interest in them. The function of this paper will be to generalize from the data and report certain conclusions which the evaluations have uncovered.

Project Year 1967-1968

The rationale for the first year evaluation was to identify control groups. who were not utilizing aides in their building, and to compare them on several dimensions, over time, with the teachers and pupils who were in the experimental schools (i.e. those where the Title III aides were located). An initial administration of the evaluation instruments was made in October, 1967, and baseline comparisons between the groups were made. A second administration to the same groups was made in April, 1968, after the experimental group had been working with aides for several months.

Several of the instruments were designed to test the effect of aides on the attitudes of teachers with whom they worked. There were no significant differences between the control and experimental groups in the fall administration. However, by spring, the teachers in the schools

in which aides were used had significantly higher opinions about the value of aides. Those teachers were prone to express a willingness to assign aides to a wide range of tasks which both the experimental and control groups had previously shunned.

Teachers' rapport with students, in rooms where aides were used, remained constant throughout the year, while in the control schools the mean rapport scores measured by a standardized rating scale (the Minnesota Teacher Attitude Inventory) had dropped by the end of the year.

The question of possible change in the academic achievement level of children who had the benefit of aides in the classroom was examined. Large group sampling of changes in the ITED tests did not produce expected difference in achievement levels between the experimental and control student groups. It would appear that establishing a teacher aide program using the rationale of an expected change in student achievement level may not be a wise decision for a board of education to make.

Project Years 1968-1969, 1969-1970

The evaluation during the initial project year was a comparison of control and experimental groups, while the second year focused on the expermental group only. The thrust of the measurement was to determine if change was linear over time or whether it was, in effect, one dimensional in nature. A special effort was made to compare beginning teachers, who were in the experimental schools for the first time, against the change pattern of those who were more experienced in the use of aides.

Although there were exceptions among the various tests, it appeared that change in attitude about the value and the usage of aides did not have a linear characteristic. Teachers who were experienced in using aides did not make better usage of aides in the second year than in the first year. New teachers were tested before they began work in the fall and their scores were not significantly different from the pre-tests of the experimental and control teachers from the previous years. Their scores at the end of the year were not significantly different than the teachers who were finishing their second year working with aides. The success of an aide program appears to be determined during the initial year. Teachers did not change significantly after that time.

The researchers were unwilling to accept ipso facto the tenet that aides are economically valuable to a school district. A cost/utility study was

initiated during the 1968-69 evaluation year and continued through 1969-70. During the first year of the study, only six of the fourteen aides who were involved achieved a positive cost to utility ratio. Feedback of this information to the district had important effects for the type of use aides were assigned in the second year, as well as for adjusting the salary scale of the aides in the district.

These adjustments had a dramatic effect on aide usage during the second year of the cost study. In 1969-70 all but three of the fourteen aides had a positive cost/utility ratio.

The fact that aides cost less to hire than teachers does not necessarily mean they are a saving to the district. The study shows that their economic value to the district is determined by the utility of the tasks which they perform. The key component in the change between the first and second year was in the amount and percentage of time aides worked at tasks labeled Instruction in nature. Assigning utility values to tasks may have an additional value for school districts. Use of a panel of board members, teachers on the negotiation team, and administrators has the effect of involving many people to establish objectives for programs in the district. Sharing these decision-making chores may have a positive effect on teachers as well as board members.

An interview schedule conducted on a sample of parents whose children were in schools employing aides revealed some interesting findings. Parents knew about the jobs aides performed. Many believed that aides had been a positive influence upon their own children, and they were enthusiastic supporters of the aide program. From a public relations point of view, the aide project was a success. In an era when schools are "under fire" on many issues, an aide program may be a valuable adjunct to the organizational pattern of a system.

Near the conclusion of the project, teachers and aides were asked to scale a long list of pre-scaled questions about the functions of the aides. Ranking mean scores and using correlation techniques to interpret the data revealed a high degree of agreement among the groups about the tasks which aides "do" as well as "ought to do." In Grand Forks, the perceptions of both aides and teachers on the position of the aide are highly congruent, obviously a highly desirable finding in any complex organization.

Training aides is an expensive undertaking, particularly if an aide is unhappy or unsuccessful in her work. Clearly it would be an advantage

to an employing school district to have a set of criteria which would correlate with aide success.

An exploratory study to attempt to arrive at predictive criteria was undertaken. Prior to their employment, aides were given a battery of tests and inventories; in addition, personal data were recorded. Teachers with whom aides worked made multiple ratings of the effectiveness of the aides during the year. These were compared to the data previously collected. Certain sub-scales of the 16 Personality Factor Inventory appeared to highly correlated with aide success (as rated by teachers). The desired qualities on the inventory were: A) reserved, detached, cool; E) humble, mild, accommodating; Q_2) group dependent, a "joiner" and a follower; and Q_4) tranquil, torpid and unfrustrated. The preliminary finding was that prospective aides whose scores on the inventory are toward the end of the continuum described by the words listed above would be rated highly by teachers. Of course it will be necessary to continue the study over time to determine the actual predictive value of this inventory in hiring aides.

It is impossible to cover all the facets of the research in a short paper such as this. An effort was made to report on certain aspects which appear to be significant as well as having potential for further study. If one's research interest has been whetted by this short report, he may find the entire research in the reports previously mentioned. The complete data and research findings are available from those sources.

John Thompson

PART II

Significance

TEACHER AIDES
The Significance of Their Impact on The Public Schools

By Wayne Worner

Significance

Education in Grand Forks, as in nearly every other school district in America, does not consist of single entities or fragments operating independently of one another. Education is a process--an interwoven, intricate mechnism that has lifelike characteristics. It moves, changes shape, direction, speed and politic. It is subject to local, state and national influence and a multitude of internal factors.

As the "Teacher and His Staff" project completes its third year of operation it is important that one pause and reflect upon the significance and impact of the project in terms of its originally stated goals and objectives. Perhaps even greater significance should be attached to the impact of this project upon the entire educational climate and atmosphere of the total school district.

This project, which began in 1967 stated several assumptions:

1. that better education might be provided utilizing different staffing patterns, and

2. that teacher shortages would continue and might be alleviated by the procedures developed, and

3. that teachers could learn to work productively with other than certified professional staff.

In general, the assumptions have been proven correct. Although the teacher supply problem has improved substantially, the other dimensions studied have provided substantial evidence to support the notion that significant changes in staffing may be not only desirable but perhaps, necessary if education is to survive.

As more and more school districts throughout the country encounter bond election disasters and taxpayer opposition to mill levy increases, it becomes increasingly clear that bold new approaches toward reducing the slope of the expenditure curve are necessary. The solutions which

have been applied--reducing services by shortening school terms, cutting back on professional staff and services or selective recruitment of minimally qualified or inexperienced teachers are not appealing in the light of the ever-increasing demands and expectations placed on the schools by our society.

The solutions to these problems are indeed as complex as the problems themselves. School districts must first seriously review the manner in which they distribute the resources they now have available. They must develop better methods of accounting and cost benefit analysis in order to make decisions based upon accurate information and priority considerations.

School Boards and communities must look carefully at the implications of school building utilization which now amounts to one-third of the day for one-half of the year or a utility ratio of approximately 17 per cent.

Curriculum must be reworked and pruned constantly with greater emphasis on providing tools for learning and problem solving rather than facts and data for solving yesterday's problems.

Perhaps the most significant aspect of the problem lies in the consideration of people utility. Most school budgets allocate from 80 to 85 per cent of their resources to people costs. Most school systems are entrenched in salary schedules which are entirely quantitative (time and grade) and not qualitative (job description and quality control).

Technology too, should be able to provide some relief in the education sector of the society, just as it has produced significant changes and improvement in nearly every other phase of the American economy.

Certainly the activities undertaken by the Grand Forks School District under the Title III funding for "The Teacher and His Staff" have provided this school district with new directions to solving the problems facing this school district. The research and dissemination activities of the project have had and will continue to have a lasting effect on the Grand Forks Schools and the schools of North Dakota.

The findings and results of the project have already modified the planning and direction of this school district. The project stimulated an extensive feasibility study of the Extended School Year concept in 1968, a local school district investment of over $200,000 for curriculum development and revision in 1969 and the development of fourteen differentiated

staffing teams this past year. Approximately fifty teacher aide positions have been provided in the district with some clear indication that cost benefits will accrue through these modifications.

It would appear that the project which began three years ago to test certain specified objectives may well provide the impetus and direction for the survival of the school district with accompanying improved educational opportunity for students and slowed expenditure increases.

Dr. Wayne Worner

PART III

Experiment Schools

Reports

THREE YEARS OF TEACHER AIDES

AT J. NELSON KELLY ELEMENTARY SCHOOL

By Jerry Abbott

Blanketing the nation with teacher aides who do no more than clerical work and supervisory duties will add little to instructional improvement in our school systems. Only when teacher aides are part of a well-defined, well-organized and well-administered auxiliary program will their impact be deeply felt.

The most important factor to consider when placing teacher aides in a school is the type of educational leadership that exists both from the standpoint of instructional teams and supervisory teams. Creative leadership coupled with teacher aides as part of a well organized auxiliary program will insure the success of teacher aides and therefore the improvement of instruction.

These are conclusions reached after working with teacher aides in a three-year experimental program at J. Nelson Kelly Elementary School in Grand Forks. It was three years ago when the Federal government granted the Grand Forks Public School District over $200,000 to experiment with teacher aides. The program took place in two elementary schools and one junior high school.

The beginning of the experimental teacher-aide program coincided with opening of the J. Nelson Kelly school three years ago. It was fortunate because when Kelly school opened, it was with an emphasis on individualized instruction. This is the story of how that program has developed over the past three years and the part that teacher aides played in that development.

When the school opened, the staff immediately agreed that a tremendous gap existed between the past methodology they had employed and what was presently needed to meet student needs. The greatest need, staff members agreed, was an open-ended program that would allow students release for their creativity.

The summer before the school opened, Principal Jerry Abbott attended a summer reading institute at the University of Wyoming. Part of the institute was devoted to the study of personalized reading. This was the spark that started the attempts at individualizing the instructional program.

Principal Jerry Abbott talks with teachers,
Gerald Cook and Ron Bommersbach.

Personalized reading is not a method of teaching reading; rather it is a way of organizing the reading program. It is based upon Willard C. Olson's three principles; seeking, self-selecting and pacing. In this program children are allowed to select their own books and read them at their own pace. Each child has a conference with his teacher about his book. During the conference the teacher diagnoses the child's needs. When she finds several who have similar needs, she groups those children around that need. As soon as the need is met, she disbands the group and begins again. In this program an attempt is made always to group children on the basis of what they need to know and not who they are.

How do teacher aides function in personalized reading? Personalized reading programs require the teacher to have about ten books per child available at all times. To obtain the required books is difficult. Teacher aides can be of great help. Teacher aides can meet with children at times. When a teacher is conferring with one child, what are the other twenty-nine doing? They are generally working on assigned work, or at a center of interest, or they could be working on a book sharing project. The possibilities for utilization of teacher aides in such a program are truly legion.

Mrs. Broderson, teacher aide, and children grouped for reading needs.

Mrs. Broderson, teacher aide, and child in conference.

Reading Conference in the library
Teacher aide, Mrs. Clarine Lian, and student

This program was all that was needed to make us think about what was happening in the rest of the curriculum. We couldn't very well open up part of the curriculum and then require children to function in "grade level" materials in all other subjects.

After reading it was natural that spelling would be next insofar as spelling is simply the opposite side of the same coin. Traditionally each child in a given room has the same spelling book no matter what his abilities. The problem is that some children are very poor spellers while others spell very well. What was needed was an open-ended spelling program to solve the problem of individual spelling differences that exist in each classroom.

We found a partial answer to the spelling problem in a multi-level spelling kit from the reading institute at the University of Wyoming. It was developed at the university laboratory school by a man named Burdett Johnson. Nine years of research went into the development of this kit.

Spelling Kit

The kit is made up of spelling lists based upon the utility of words in writing and vowel generalizations. The program gives teachers access to a kindergarten through twelfth-grade spelling program at all times. Diagnostic placement tests are given to each child. (Incidentally, teachers have reported children in Intermediate 6th as being diagnosed from levels two to level ten). The children work according to a predetermined spelling plan in groups of two. As they finish a level they take a retention test to determine whether they should go on to the next level or do more work in that level.

Small groups work together

What happens to the traditional role of the teacher? She is no longer at the front of the room directing the same spelling lesson for all children. As the children work in teams she is free to move among them and to help those who need it. Periodically, as needed, she pulls those who are having trouble in a certain skill and groups around that skill. As soon as the need is met, the group is disbanded and the process starts over again.

Mrs. Broderson, Aide, prepares audio-visual equipment.

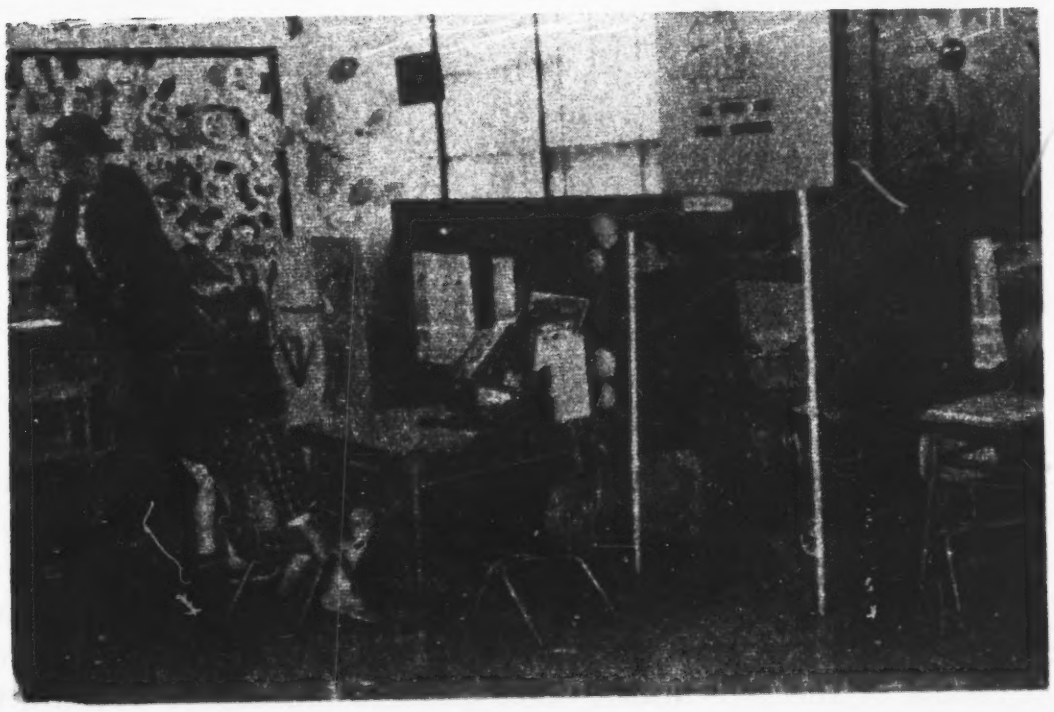
What about the teacher aide? She can be used to answer any questions the children may have. She can be used to replenish worn-out cards and refile cards which have been put in the wrong place. She can give retention tests. She can tape retention tests. Anytime children use audio-visual equipment there is a strong possibility that help will be needed. Teacher aides close by can assure this help.

By the end of the first year, reading and spelling were well underway, and social studies became the concern. Traditionally each child in the class had the same book. Some could not read it while others read at much higher levels. We have addressed ourselves to that problem by developing multi-media kits.

In one of the books we use at Intermediate 6th it was found that 110 countries were studied. We felt the children were learning a little about a lot. We wanted to change that and have them learn a lot about countries significant today; therefore, we developed six multi-media kits. They were USSR, China, India, Africa, Southeast Asia, and the Near East. Each area is studied for a period of from six to nine weeks depending upon the interest of the children.

The kits are collections of everything we can find on that particular study. They contain paperback books at several levels of difficulty, tapes, teaching pictures, filmstrips, and free materials that are available from each country.

The structure of the program enables children to work at various stations.



Primary writing station

Station number one is a listening and viewing station. The children view a filmstrip and listen to a tape recording. Station number two is a writing station based upon what was learned at station one. Station numer three is a small group station where children have ample opportunity to discuss

either with their teacher, a student teacher or the teacher aide things difficult to talk about in large groups. Station number four is a map-study area. After they have worked at the various stations they spend time in a project area and work on projects of interest or their notebook.

Mrs. Broderson, teacher aide, works with a small group

Teacher aides are vital to this program. The aide moves from station to station and answers questions children may have. Sometimes she meets with the children in small group sessions. Audio-visual equipment is important in this program. Part of her time is spent operating or helping children operate machines such as the listening center, the tape recorder, the filmstrip projector or the overhead. She gathers materials constantly, as the kit must be constantly updated. She makes new tapes and transparencies as the old ones wear out from handling by the children. Part of her time is spent in the project area helping children with projects they intend to present to their classmates and teachers.

The next major concern was the science program. Traditionally all children of a given age were asked to read the same book. Even worse was the fact that our program in science was a "reading program." All experimentation was done by the teacher.

We again found a partial answer to our science problem by building multi-media kits. We decided that ten kits would cover adequately the big topics that are studied in elementary science. Paperbacks on several reading levels solved the problem of children not being able to read the materials. Filmstrips, tapes, teaching pictures and charts were added. We still were not satisfied because our kit was "reading" oriented, and science, we know, means student involvement. To solve this problem thirty problems were made for each kit. They were the classic experiments in science that could be easily done with materials found in all schools or homes.

Within the last year we have been supplementing this program with a commercial program from McGraw Hill called Elementary Science Study. (ESS) This program revolves around student experimentation with homemade materials.

What part do the aides play? In the development of a science program which has at its core student experimentation, there is plenty of work for every available person.

Mrs. Lian, aide, works with a small group in science.

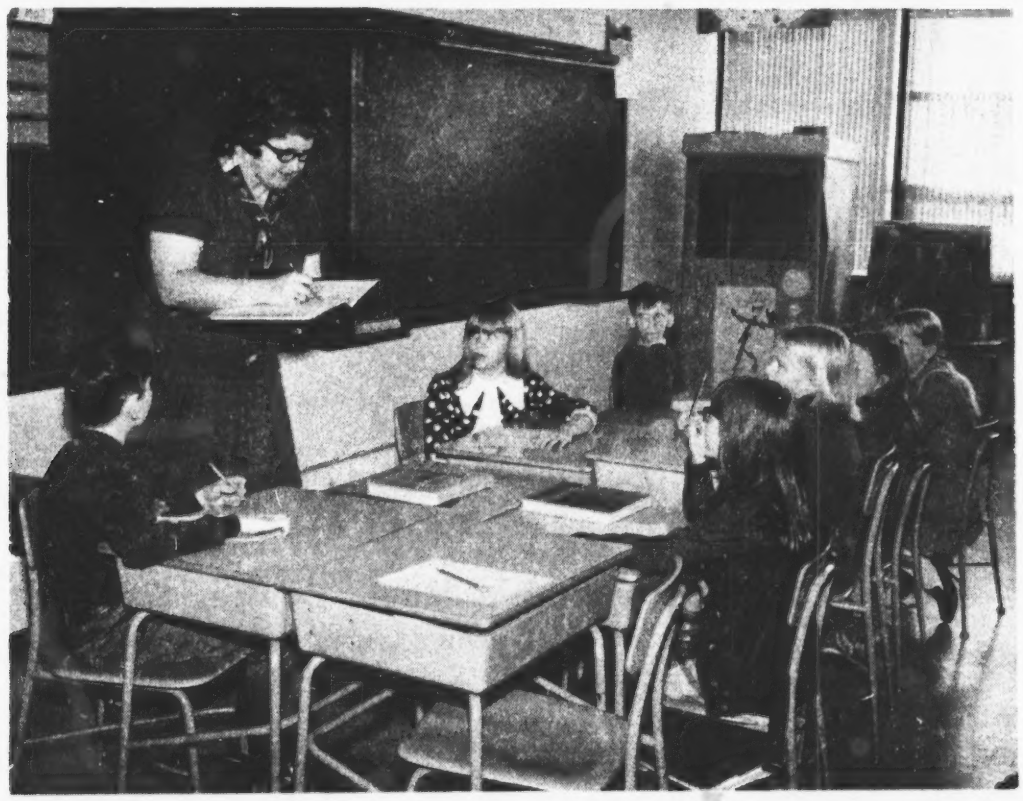
Aides gather materials. They move about the group and help individuals; sometimes by answering their questions and sometimes by asking the pupil a question. Anytime a teacher uses a multi-media kit there is the danger of being overwhelmed by materials. Teacher aides can help insure the coordinated use of these materials.

Mathematics presented little problem in that it is not so heavily reading-oriented. The textbook we have been using is more or less a programmed text, and therefore it was quite easy to find out where the children were and let them proceed at their own pace. Conferences are held with the children to diagnose skill problems and prescribe alternatives. Periodically children who exhibit the same skill deficiencies are grouped for work in that particular area. To provide for those children who do not function well in modern math, supplementary tapes, kits and contracts are used.

Mrs. Lian aide, works with a student
on individualized math.

How are the aides used? They gather materials; they replenish worn-out materials; they work with small groups, and they confer with children.

All of the intermediate children are taught in teams. For three years the staff has been making a great effort to break out of homogeneous grouping into complete-need grouping. This is not easy nor has it been done completely. Our efforts have now led us to flexible scheduling in some of the rooms.



Mrs. Lian, the aide, helps with flexible scheduling

Each child schedules his own day except for music and physical education. The teachers spend most of their time either conferring with one child or working in small groups. The problems teachers encounter in trying to schedule flexibly sixty students each day are endless, and at this point the teacher aide becomes vital.

Interwoven throughout the program is an effort to make learning significant. Many children have trouble bridging the gap between the "school world" and the "real world." We must help them bridge this gap and it is best done by exposing children to relevant materials. We use countless numbers of paperbacks, newspapers, and magazines. We make every effort to use their interests as a guide.

Mrs. Lian and the teacher, Dorothy Sparks, assist with newspaper work.

Teacher aides have added much to this dimension of the school program. First of all, teacher aides bring to the classroom a different background than the teacher and therefore have much to add. In working with teacher aides over the past three years, we have found that in some cases the teacher aides identify better with a given child than does a teacher. Secondly, the attempt to serve individual needs creates additional work. Teacher aides available to lend a helping hand can do much to inspire a teacher to "press on."

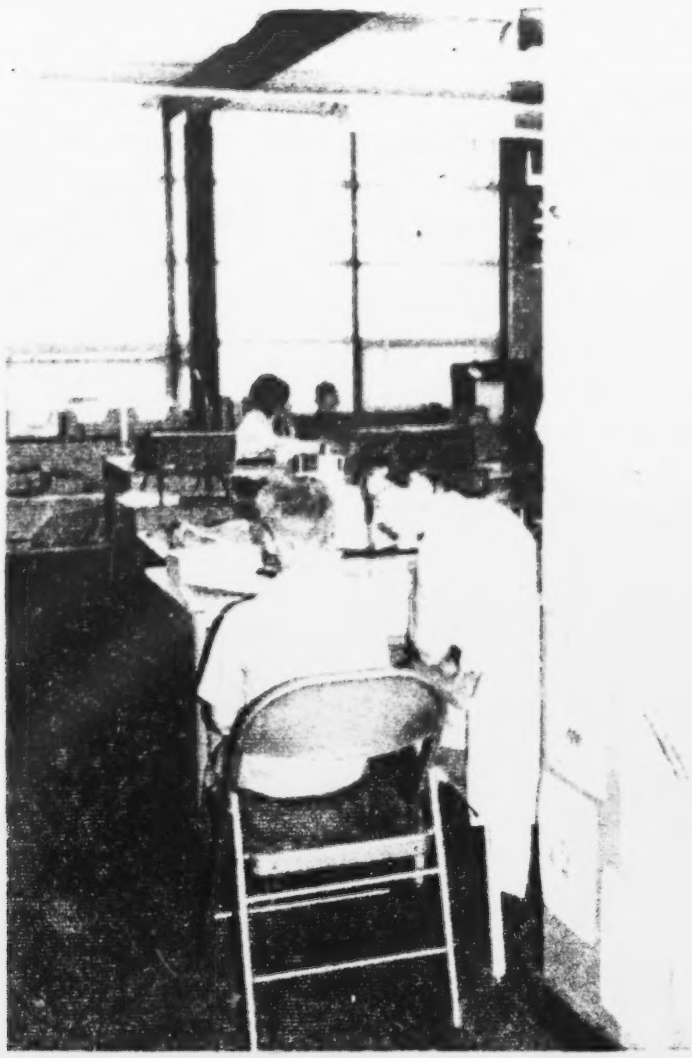
Earlier it was hinted that the development of an auxiliary program was essential to the proper utilization of teacher aides. An auxiliary program is simply finding every available person who can help the school and then assigning the correct task. Our auxiliary program has included teacher aides, volunteer mothers (VISTC), Neighborhood Youth Corp students, our own students, the school secretary and the principals

The secretary is the head of the auxiliary program. All requests are brought to her and she decides who is in the best position to do them.

If the material is of a confidential nature, she may want to do it herself. If it is a cut-and-paste job of long duration, she might call upon a couple of mothers who enjoy working together. The main thing is to keep as many clerical tasks as possible away from the teacher aides so that they are free to work with children.

Elaine Laursen, the secretary, is head of
the auxiliary program.

I hope the reader has not assumed that our staff has arrived, and therefore found solutions to all instructional problems. We feel that we are just scratching the surface of instructional improvement and are far from reaching that elusive goal of individualized instruction for all pupils.



Teachers confer with children.

Primary small group

THREE YEARS OF TEACHER AIDES

AT CARL BEN EIELSON ELEMENTARY SCHOOL

By Dan O'Shea

The impact of the teacher aide project on the development of an innovative instruction program is enormous, particularly in its contribution to the raising of professional levels among teachers. One has only to examine the tasks assigned to teachers in the past to realize that the demands on their time were inhumane and often above and beyond the call of duty. Among other things, teachers were expected to

- be diagnosticians
- be therapeutic in their approach to teaching and in prescribing
- remedial learning experiences.
- apply the principles of psychology
- complete an infinite number of forms
- supervise lunchrooms, halls, and extra-curricular events
- confer with parents and children
- entertain visitors
- be innovative and creative
- be alert, charming, and intelligent
- be master technicians in operating all kinds of hardware
- be free of error at all times
- be accurate in keeping records
- be ready to discuss any subject from international relations and internal social problems to caterpillars and carburetors
- keep cool under some very sticky and exasperating circumstances.

Most of the foregoing are areas in which teachers have had very little if any preparation. Teachers need time to teach. Providing that time and seeing that it is utilized to the advantage of the student is the first step in initiating "teaching time"change in the schools. Teacher aides have made the difference at Carl Ben Eielson School in Grand Forks, North Dakota.

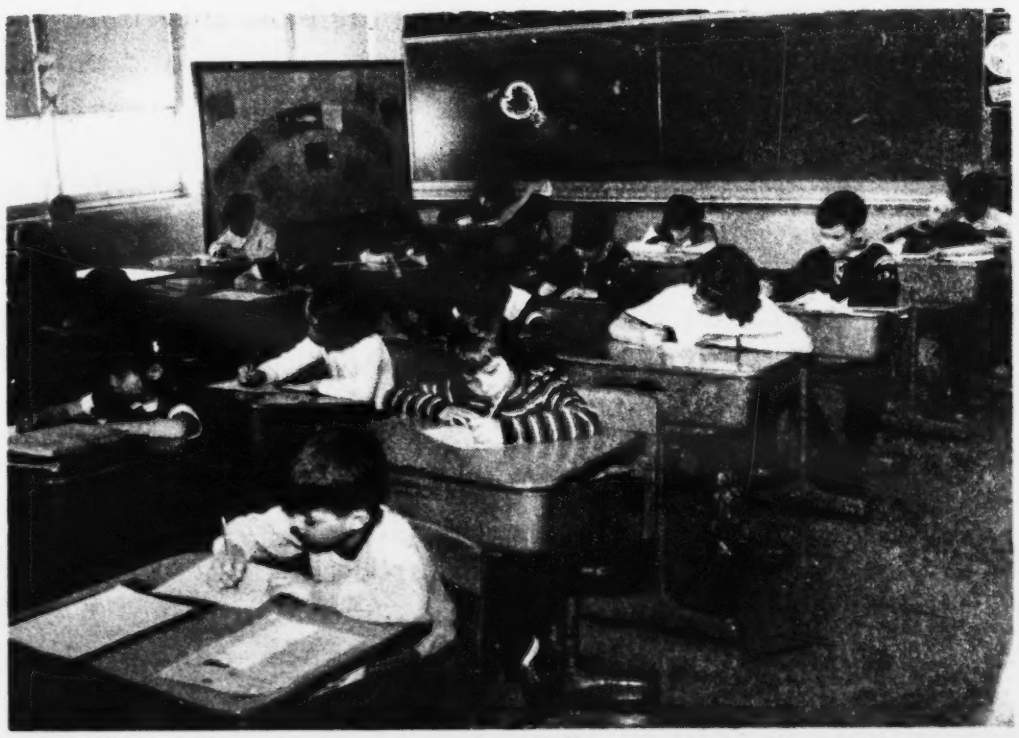
Teacher Aides Make The Difference

A look into a typical classroom at Carl Ben Eielson School in 1966 revealed the minimum equipment, furniture, and supplies. A closer examination revealed thirty students, little student-teacher involvement, a curriculum that was based primarily on fact instruction and learned by rote memory. The ingredients described above were typical breeding grounds for potential

dropouts and poor development of the students' innate creative talents. Teachers were willing to work and wanted to do a better job with children, but they were prevented from doing so by the clerical detail that consumed up to 35 per cent of their teaching and planning time.

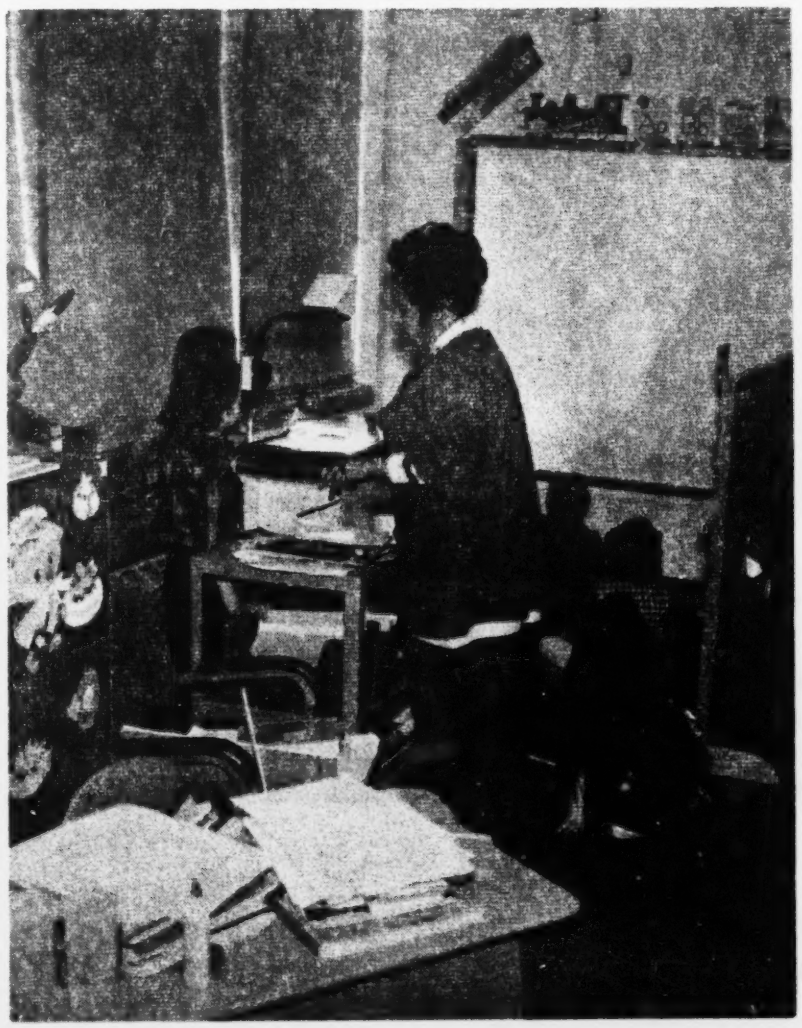
As the school year of 1966-67 progressed, teachers began to itemize problems of curriculum, inadequacies of instructional materials, limited technological support and lack of clerical assistance. Through a process of self-evaluation, using the criteria of self-appraisal of the Association for the Evaluation of the Elementary School (AEES), the teachers pointed out the areas of their concern and identified priorities in the following order:

1. A need for teacher aides
2. A need for a full time librarian
3. A need for library materials--tapes, filmstrips, book, and paperbacks--and equipment
4. A need for a language development specialist
5. A need for special teachers in music, physical education and art.



A traditional classroom

The staff decided to go to work on the five areas. The PTA agreed to help with raising funds for library materials and to provide volunteer help to make the library more functional. The school staff developed a proposal for team teaching including the use of teacher aides. The proposal met with some approval, and that year we hired our first teacher aide. The next year, our school became one of the three experimental schools in Grand Forks to participate in the "Teacher and His Staff Project" with an allotment of six teacher aides. Teachers who visited other schools came back to sort out and adopt ideas and techniques which they considered worthwhile. Machines and materials were purchased and developed to enhance the program that was designed.



Team leader and small group

In 1967-68, the staff made rapid strides in learning to use teacher aides. At first aides did mostly clerical tasks, but soon they became involved in the instructional plans and programs of the teachers. Cooperative team teaching began in six teams. The staff began to study the concept of differentiated team teaching as a way to provide a better guarantee of consistent programs, planning, teaching, and evaluation, as well as the utilization of material, equipment, and space. A proposal was written and presented to the central administration, which gave permission to initiate one differentiated staff team at 6th grade and to continue with the other cooperative teams during the year 1968-69.

A specialist helps individual pupil. The classroom teacher directs small group.

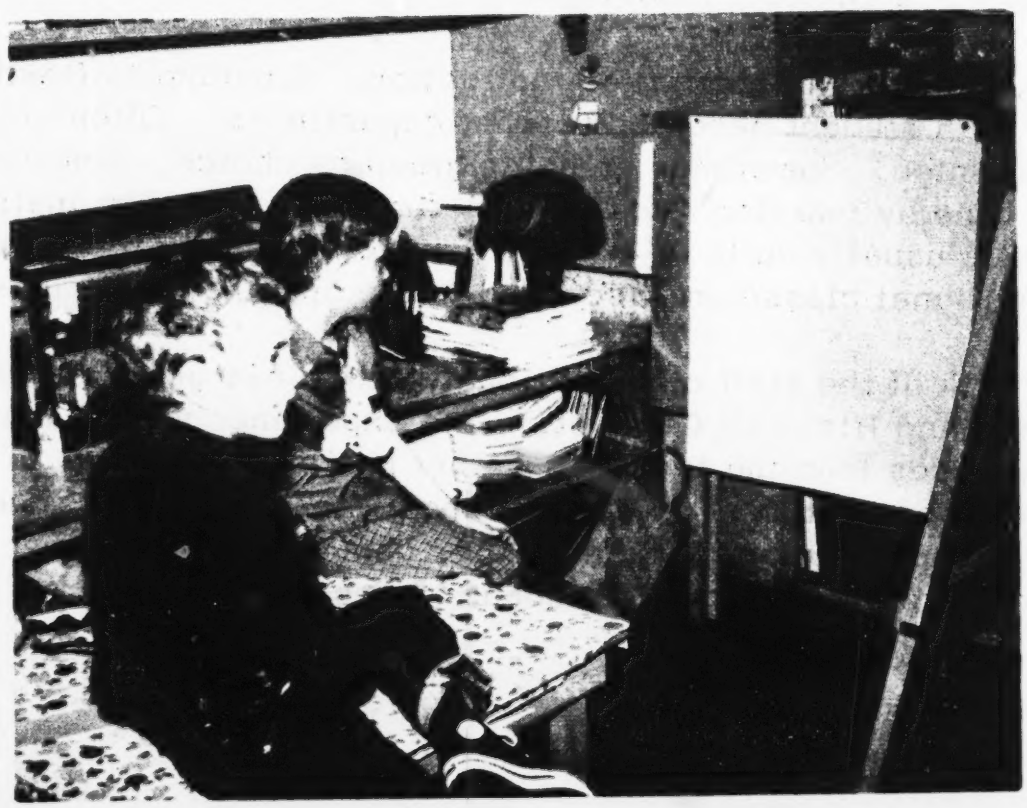
With the success of the differentiated staff team, plans were made to expand to four teams for the 1969-70 school term. The differentiated staff units are clustered in Colonies which include the facilities, staff, students and materials. The colonies are described on the following page:

Colony A	1 Team Leader 1 Staff Teacher 1 Teacher Intern 1 Clerical Assistant	90 Students	5 and 6 years
Colony B	1 Team Leader 3 Staff Teachers 1 Teaching Assistant 1 Clerical Assistant	120 Students	6, 7, 8 years
Colony C	1 Team Leader 4 Staff Teachers 1 Instructor 1 Teacher Intern 2 Teaching Assistants 2 Clerical Assistants	210 Students	8, 9, 10 years
Colony D	1 Team Leader 4 Staff Teachers 1 Teacher Special Education 1 Instructor 1 Teacher Intern 2 Teaching Assistants 2 Clerical Assistants	210 Students	10, 11, 12 years

The focus is on individualized instruction. Grouping is flexible and varies with student need and teacher capabilities. Often grouping is task-oriented. Sometimes students group by choice. Sometimes grouping is done by learning rate and sometimes by sex. The instructional setting is usually quite relaxed without the formality that characterized the traditional classroom discussed in the opening paragraphs.

The growth of the staff organizational pattern has grown out of the "Teacher and His Staff Concept." The experience with teachers and teacher aides learning to work together has been beautiful to watch. Teachers and teacher aides are making a breakthrough in educational involvement at Eielson school as they plan together, teacher together, and evaluate the teams' and students' successes together.

Pupils work individually as teacher moves about to give help and encouragement.

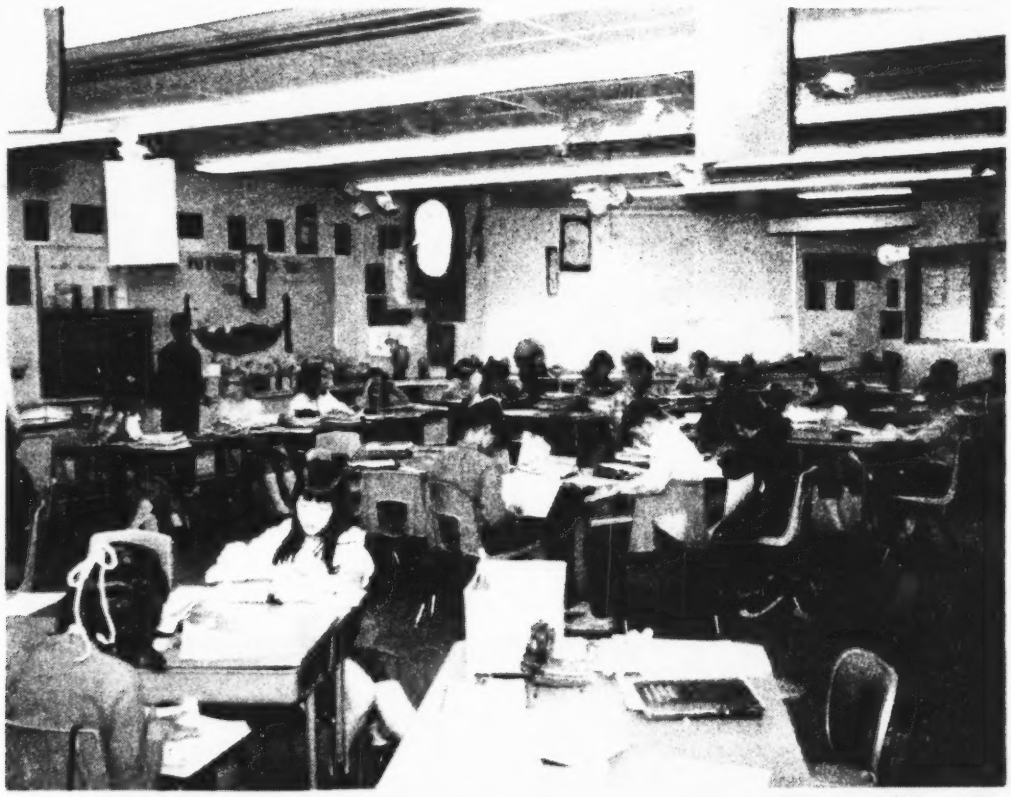


One pupil operates filmstrip viewer.

The team plans and evaluates.

Each instructional team has the responsibility for the total educational experience of from 90 to 220 students. The team determines instructional procedures in each colony and assesses the characteristics of each child, develops objectives, selects materials and experiences, and decides jointly on the means of measuring pupil progress. These procedures provide for children within each colony to benefit from the best in each teacher and from the combined strengths of several teachers.

The efforts of each team in planning for instruction are crucial to the professional enterprise. In order to prepare appropriate activities, the colony staff assesses each child's learning modality and level of success. These measures have a greater chance for accuracy when the professional knowledge and skills of several teachers, rather than one, are brought to focus. After diagnosis, the staff assigns to large groups, small groups, one-to-one or independent activities in order to achieve the goals of the team and his own specific instructional objectives. The colony staff decides who will direct which activities.



Individualized instruction through independent study.

Students team for learning.

The teacher helps one-to-one.

Teacher aides identify and perform non-instructional tasks under the direction of the team leader. Aides work directly with the teachers in providing the best possible learning opprotunities for children. From six aides in 1967-68, our Teacher Aide Corps increased to ten last year and this year fourteen teacher aides are extending the efforts of the professional teachers at Carl Ben Eielson Elementary School.

The differentiated staffing concept has expanded our educational perspective greatly. Whereas teachers under the traditional discipline devoted so much time and energy to peripheral tasks that their professional duties often took second place, the use of teacher aides has enabled them to concentrate on pupil growth in the learning situation.

Youthful artists

Free expression
through dance.

THREE YEARS OF TEACHER AIDES

AT SOUTH JUNIOR HIGH

The Teacher Aide Project at South Junior High School was funded under Title III of the Elementary and Secondary School Act of 1965. Our project at South Junior is in its third year of operation and it will terminate at the end of the present school year (1969-70). However, as we move into a flexible scheduled program (1970-71) we feel that aides will play an important role.

Warren Loberg
Principal of
South Junior High

Each year, beginning during the school year 1967-68, South Junior has, under Title III, employed seven (7) teacher aides, which have been selected according to the following classifications:

Four (4) classroom aides

Two (2) clerical aides

One (1) Special Education (classroom) aide

They were selected from the following job descriptions:

I. Clerical Assistants

Activities: Typing, filing, collecting monies from students, correcting objective tests, assisting in supervising students, etc.

Minimum Requirements: A high school diploma, typing ability, neat appearance, and an interest in serving the needs of children.

II. Classroom Assistants

Activities: Maintaining the physical appearance of the classroom, assisting pupils with clothing and personal problems, operating audio-visual equipment, assisting in the supervision of children, etc.

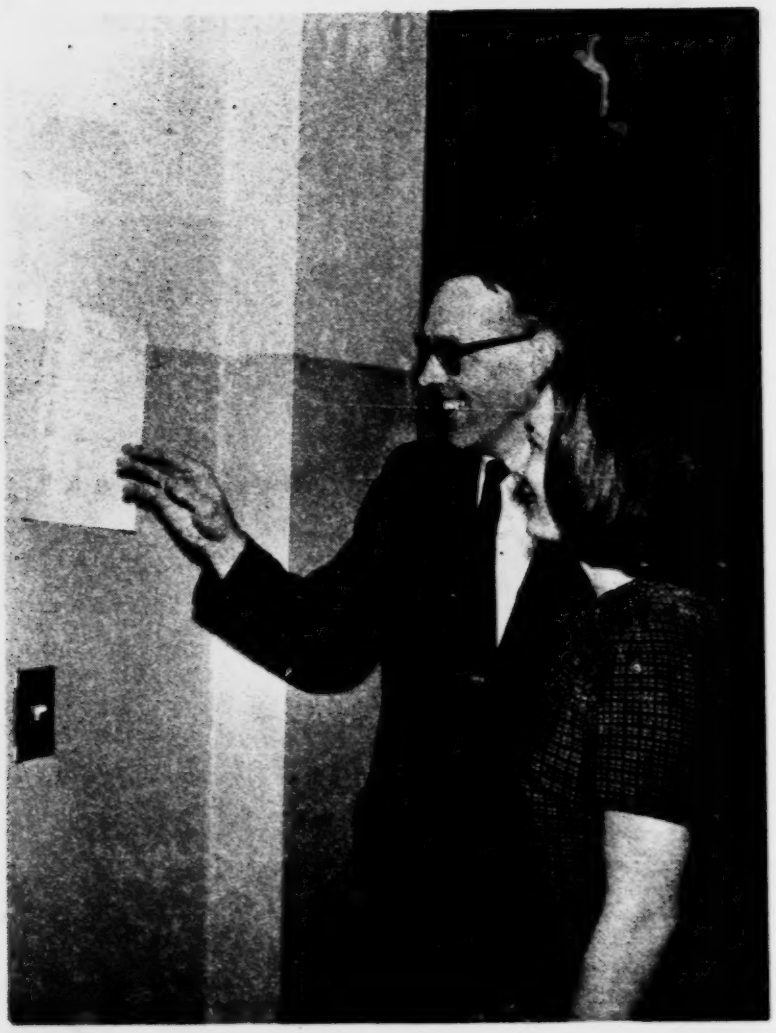
Minimum Requirements: A high school diploma, an interest in serving the needs of children, neat appearance, the ability to maintain confidences, and a congenial disposition.

Desired Skills: Clerical, artistic, musical, athletic, mechanical, etc.

Not only has South Junior been granted additional staff in the form of teacher aides during our Title III tenure, but the monies spent for travel, supplies and equipment have been exceptionally welcomed to the point that we have been able to supply adequately the physical materials and supplies to many of our staff that they had to do without prior to Title III funding.

To be an effective staff member operating with a number of teacher aides, our staff had to learn to delegate authority and responsibilities, to use tact in dealing with their assigned aides, to supervise their aides properly, and to assign duties and responsibilities that were use-

ful tools of instruction and not busy work that only took time and energies, and which would not contribute to the learning situation.



Jim Hanley, aide coordinator, discusses schedule with aide, Mrs. Sally Harris.

Some responsibilities that have been suggested to our aides in their in-service training and also in our summer workshop are the following:

I. Limited Instructional Activities

a. Put written and number work on the board
b. Call off spelling words
c. Review with word, phrase, and number cards, etc.
d. Read during story period and similar tasks
e. Work with small groups
f. Assist slow or fast child and/or group
g. Show slides, filmstrips, and films
h. Research for enrichment material

i. Record materials suggested by the teacher from enrichment reading.
j. Administer tests
k. Grade objective tests and standardized tests
l. Assist teachers to provide more individual attention to pupils.

Mrs. Jean Taylor, classroom assistant aide, works with a small group.

II. Housekeeping Chores

a. Care and arrangement of teaching materials and supplies
b. Maintain orderly arrangement of the room
c. Assist science teachers with laboratory equipment
d. Assist teacher in large group demonstrations through readying and removing demonstration materials.

III. Routine Duties

a. Prepare individual folders for new pupils
b. Prepare general information on:
    report cards
    cardex
    student record cards
    pupil information cards

Mrs. Kriste Johnson and Mrs. Percette Stranger, teacher aides, grade tests.

c. Prepare and run off duplicating material
d. Prepare transparencies
e. Draw resources from the library
f. Prepare and keep current class lists
g. Assist with door, hall and lunchroom supervision
h. Assist in preparation of bulletin boards
i. Secure, set up and run audio-visual equipment
j. Assist teachers in physical education classes
k. Assist in collection of milk and lunch money from pupils

Mrs. Ruth Peterson, clerical aide, runs off materiai

Mrs. Percette Stranger, classroom assistant aide, on lunch duty

l. Attention to pupils' physical needs (clothing, personal hygiene, etc.)
m. Typing - master copies, tests, reports, etc.
n. Type teacher comments to pupils from tape recording.

Since some of the monies that have been funded for our Title III project at South Junior has been earmarked for travel, the majority of our staff has had an opportunity to visit other junior high schools. Our own school has been studying flexible scheduling and we, at this state, are set for this type of instructional approach for the coming school year (1970-71). We sincerely believe that had it not been for our travel allowance, we would not be in our present situation of being prepared for flexible scheduling.

South Jr. High teachers participate in orientation
at Highland Park Jr. High, St. Paul, Minnesota

Perhaps all reports should assume that if a program is to succeed, it has to have the right kind and type of local administration. Mrs. Margaret Abbott has been the project administrator of our Title III Implementation of the Teacher and His Staff Concept since its beginning in 1967, and

it is our impression that because of her this project has been a highly successful operation. We have had outstanding aides, we have had good teacher-aide morale, we have had good rapport between aides, staff and local school administration, and we assume that the instruction these past three years has been of a high quality because of the type of leadership Mrs. Abbott and James Hanley, our local school directors, have given to this program.

Orientation for South Jr. High teachers at
Hubert Olson Jr. High in Bloomington, Minnesota

In preparation for flexible scheduling we have experimented this year with two islands of continuous progress--one in math and the other in language arts. The following two reports explain the operation of these islands.

Continuous Progress Education is in the experimental stage in the Grand Forks School System. At South Junior there are two "islands" of continuous progress operating during the 1969-70 school year. These are Algebra I in grade nine and Language Arts in grade seven.

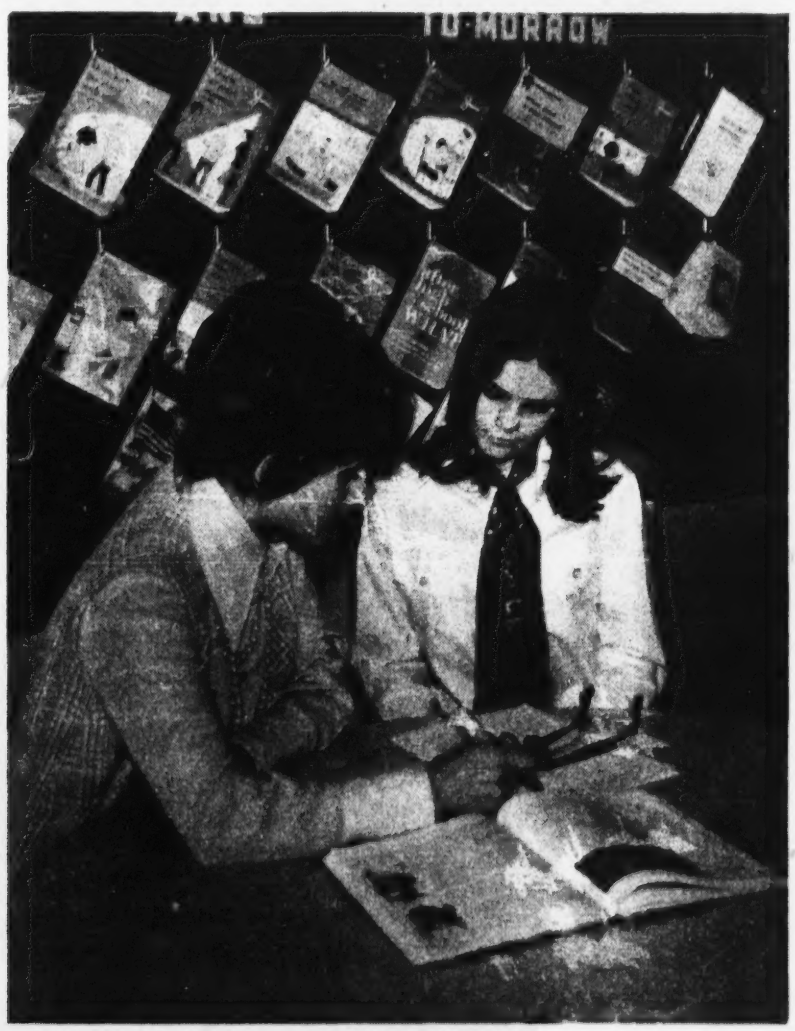
Through the use of contracts each student progresses at his own individual rate. These contracts were developed during the Grand Forks

Clerical Aides: Mrs. Arla Thrall prepares A.V. equipment; Mrs. Peterson types material.

Mrs. Johnson, teacher aide, on hall duty.

Schools' Summer Curriculum Development Project involving teachers representing all disciplines of grade K-12 for eight weeks of contract writing. Before this curriculum was adopted for citywide use, it was decided to "try out" these contracts and the continuous progress approach on a limited basis. In response to this need, twelve "islands of continuous progress" were established. They are maintained in the major academic areas--English, mathematics, science, social studies on the elementary and secondary levels.

In the language arts "island" the material to be covered is divided into four basic themes. All genres (novel, poetry, short stories, composition and drama) are included under each theme. The students progress at their own rate. Provisions are made within the program for students with reading problems. For example, the stories within the short story section vary in difficulty. High-interest, low reading-level materials are obtainable for slow readers. Students with special reading problems work with SRA reading kits and other reading-skill-building materials.

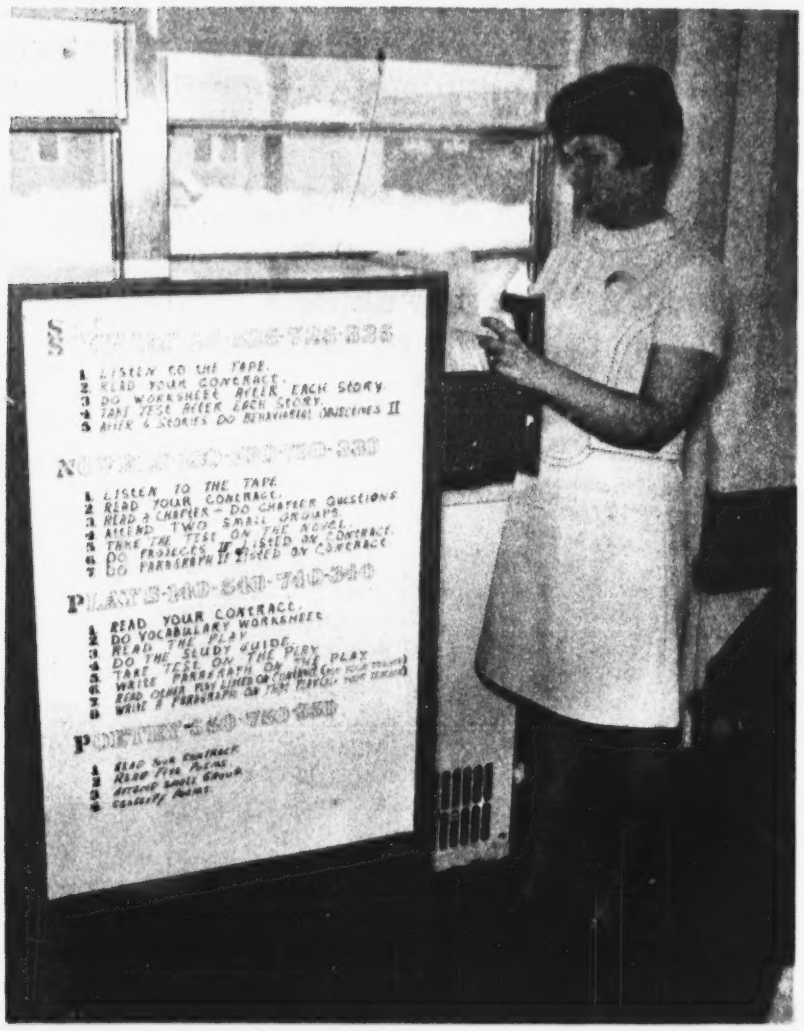


Mrs. Johnson works with individual pupil.

The "island" is manned by four teachers, two student teachers, and one full-time teacher aide in a differentiated staff team teaching approach.

The teacher's duties include work with small groups and a great deal of work with individual students on their particular problem areas. All teachers have one assignment in addition to their "island" responsibilities.

Teacher-aide help is essential to the operation of this program. The aide is responsible for all record keeping. She records grades, charts student progress, keeps student files, dispenses tests and contracts, and corrects objective tests. Additional aide help could be beneficially used in giving individual help to students and working with small groups.


1. LISTEN TO THE TAPE.
2. READ YOUR CONTRACT.
3. DO WORKSHEET AFTER EACH STORY.
4. TAKE TEST AFTER EACH STORY.
5. AFTER 4 STORIES DO BEHAVIORAL OBJECTIVES II
1. LISTEN TO THE TAPE
2. READ YOUR CONTRACT.
3. READ A CHAPTER - DO CHAPTER QUESTIONS
4. ATTEND TWO SMALL GROUPS
5. TAKE THE TEST ON THE NOVEL
6. DO PROJECTS IF LISTED ON CONTRACT
7. DO PARAGRAPH IF LISTED ON CONTRACT
1. READ YOUR CONTRACT.
2. DO VOCABULARY WORKSHEET
3. READ THE PLAY
4. READ THE STUDY GUIDE
5. DO THE TEST ON THE PLAY
6. WRITE PARAGRAPH ON THE PLAY
7. READ OTHER PLAY LISTED ON CONTRACT
8. WRITE A PARAGRAPH ON THAT PLAY

Mrs. Jean Taylor works at contract file in Language Arts Island.

The availability and use of good instructional materials are the backbone of this program. The student is dependent on these materials more than ever in the past because of the individuality of the approach. It is a necessity to have materials available for all levels of ability. It is essential that these materials and instructional aids be of high interest level because they serve as a motivator for the student more than ever before. The assignments and material covered in the contracts need to be thought out very carefully before the program goes into operation because students may need them at any time during the school year, thus providing little opportunity for the instructor to "keep one step ahead" of the class.

Space is of great importance in this form of education. Small group discussions are much more effective when groups can meet in an area separate from that in which most of the students are working singly or in groups on their contracts. Students seem much less inhibited and more willing to express ideas in a private situation. At the same time there is no temptation on the part of other students to listen to the discussion rather than doing their own work. A great volume of materials must be stored with easy availability to the student. Space for the movement of students is inherent in the program.

Continuous Progress Education is still in the experimental stage here, but student response to the program is good. Work suited to his own capabilities is available for every student. When the student is able to achieve success, he is happier and more willing to work.

EXPERIMENTAL C.P.E. ALGEBRA AND 8th MATH

Math Complex-Rooms 131-133-135

Originally 3 Regular Classrooms

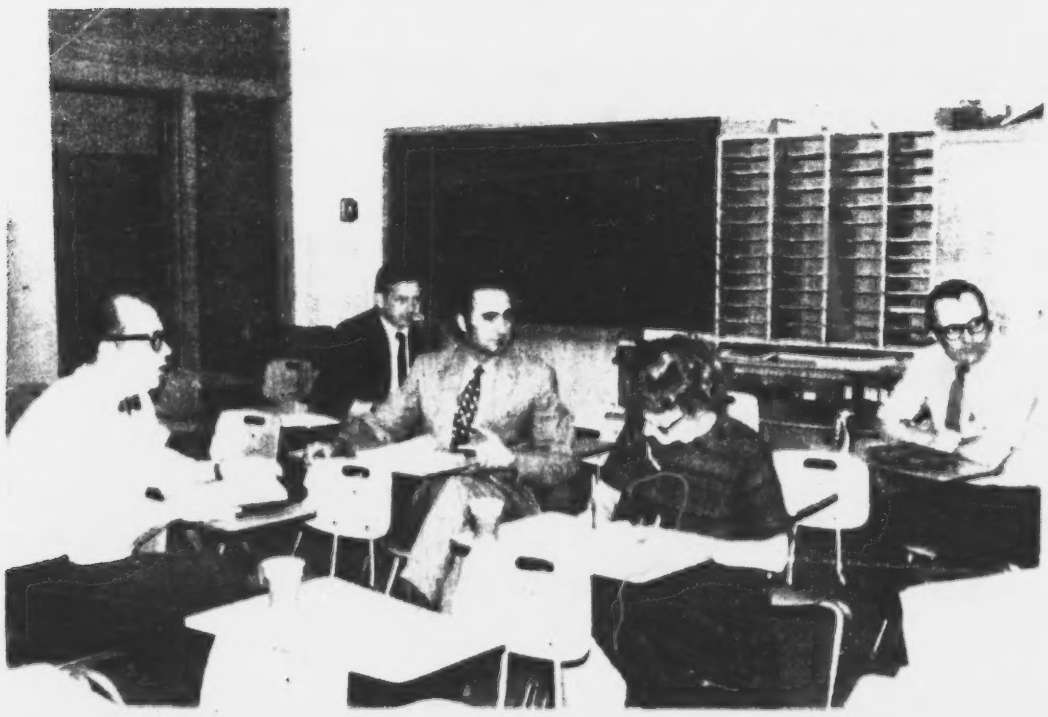
I.

SMALL GROUP AREA and INDIVIDUAL INSTRUCTION	TEST AREA and INDIVIDUAL INSTRUCTION	RESOURCE CENTER and INDIVIDUAL INSTRUCTION
Room 131	Room 133	Room 135

We use Continuous Progress Education within a traditional school day, using individualized instruction.

Each section contains approximately 100-110 students.

The program is used in 9th grade algebra for 2 periods and 8th grade math for 1 period in the A.M. only.



Math Staff meeting

STAFF

II. Differentiated Staff

A. 1 - Team Leader
B. 2 - Master Teachers
C. 1 - Teacher Aide

III. A. Instructional Media and Equipment

1. Individual Cassette recorder
2. Group Cassette Listening centers
3. Adding machines
4. Filmstrip previewers
5. Film-loop projector
6. 16 mm and 8 mm film projectors
7. Skills kits
8. Variety of geometric solids and plane figures
9. Overhead projector
10. Individual study areas
11. Small group instructional area
12. Variety of textbook materials

B. Instruction

Students have a choice of instructional media at their disposal. Each of these that we use are listed below.

1. Filmstrips
2. Tape Cassettes and related worksheets
3. Film-loops
4. Transparencies
5. Films
6. Small group instruction - 2 to 15 students
7. Individual instruction
8. Various skill kits
9. Worksheets
10. 1 basic text and 2 auxiliary texts.

C. Equipment - General

1. None to be checked out of the complex.

2. Available for use in the complex during class, or from 8:30 to 9:00 a.m. or from 3:30 to 4:00 p.m.
3. Complex is manned by an instructor during these times. Auxiliary books may be checked out on weekends from the instructor.

IV. A. The Contract (Sample attached)

1. Contains the various media and assignments for that particular behavioral objective or objectives.
2. The student is required to do the A part of each of the basic assignments, choosing from the media the ones he feels he needs to do to complete the contract.
3. When he finishes the contract and has corrected all of his required assignments, this material is validated and checked by the section instructor.
4. When the contract is completed and is approved by the instructor, the instructor signs the contract in the upper right hand corner. The student then takes the contract to the aide and she signs out to the student the Post-Test.
5. Student is allowed one copy of the contract only. If lost, will have to borrow.
6. Pre-tests
   a. Must be worked if the student can do them before any work is done on the contracts and must be completed in the period they are checked out. Must be initialed by aide.
   b. If a student passes the pre-test with 100% proficiency, he must do the reading required on that contract before he starts the next contract. (To acquaint himself with terminology, etc.)
   c. Student must report to the instructor after each pre-test the fact that he passed the test. The instructor, at his convenience, may give an additional oral test if there are any doubts about the individuals integrity.
   d. All failed pre-tests are recorded by the aide on the master sheet and placed in the failure file.
7. Post-tests
   a. Checked out from teacher aide.
   b. Testing done from 5 minutes past the beginning of the period to 20 minutes before the end of the period.

Students
work as
individuals

Mrs. Susan Best,
classroom assistant,
works in Math Island

Tests can only be checked out during this time.

c. Grading - (Required because of traditional report card for other subjects)
   (1) 1st post-test grading (70-79-C), (80-89-B), (90-100-A)
   (2) Fail 1st, 2nd post-test same grading as first.
   (3) 3rd post-test - highest grade possible D, but the score must be above 70% proficiency.

d. 3rd post-test made up and corrected by the instructor. May be an oral or written test.

e. If a student fails the 1st post-test, the instructor will discuss with the student the instructional experiences covered by the student. Then, prescribe additional instructional experiences and work with the student to guide him to the desired goal of that particular behavioral objective.

f. All failed post-tests placed in the failure file.

8. Testing - General
   a. All failed tests, must be placed in pre- or post-test files.
   b. Tests must be taken test area only.
   c. All tests must be finished during the regular class period.
   d. The aide records all tests. Grades and failures.
   e. The aide hands out and corrects 1st and 2nd post-test, and corrects all pre-tests.

9. Contracts Completed for 9 weeks
   a. First 9 weeks - between contracts 040-065.
   b. Second 9 weeks - between contracts 090-115.
   c. Third 9 weeks - between contracts 140-160.
   d. Fourth 9 weeks - between contracts 190 and Geometry I contracts.

10. Grading penalty for those below the range established for the end of each 9-week period. An incomplete is given on the report card.

IV. B. <u>Guidelines for small group instruction</u>

1. The numbers of the contracts that are being taught in small groups each day will be written on the board at the beginning of each class period.
2. Every student must attend at least <u>one</u> or more small groups for each contract.

3. Every student must sign the sign-up sheet before he attends a small group instruction period.
4. If a student fails any post-test, he must attend a small group instruction period <u>before</u> he can take any other post-test. Within this small group instruction period, he will correct his errors on his post-test and complete any additional work assigned by his home class instructor or small group instructor.
5. All small groups will be from 20 to 25 minutes in length.
6. Some students may be assigned to small-group instruction for a definite period of time.

   EXAMPLE: 1 week, 3 weeks, 1 month, 3 months, 1 year, etc.

   This will depend entirely on the maturity of the student and his individual progress.

Small group instruction

CONTRACT NUMBER: MA - 482 - 115.0

GENERAL CONTENT DESCRIPTION: Junior High Mathematics - Algebra One Ratio and Per Cent

PRE-REQUISITE: MA - 482 - 110.0

BEHAVIORAL OBJECTIVES:

1. Given "Ratios in different Numerical Forms", the learner will simplify 7 out of 10 examples.

2. Given "Word Problems dealing with Ratios", the learner will solve 3 out of 5 correctly.

3. Using the "Properties of Percentage Problems", the student will solve, with 70% accuracy, algebraic percentage problems.

SAMPLE TEST ITEM:

1. Find the larger of 2 numbers in the ratio 5 to 1, whose sum is 24.

2. How much lead is in 20 lbs. of an alloy containing 15% lead?

LEARNING AREA TAXONOMY: Cognitive: synthesis

PRE-TEST: None

INSTRUCTIONAL EXPERIENCES:

____ 1. a. (1) Read Dolciani, Mary P., Simon L. Berman, Julius Freilich, Modern Algebra, Structure and Method, Book One, Houghton Mifflin Company, 1965, pages 286 - 287, and do (a) oral 8 - 26 even, written 6 - 20 even and (b) written 21, 23, and 25, pages 287 - 288.

(2) Work Section 8 - 3 in Redgrave, Persis O. and James J. Roberge, Programmed Practice for Modern Algebra, Structure and Method, Book One, Houghton Mifflin Company, 1963, pages 73 - 74.

____ 2. a. (1) Read Dolciani, et al., pages 286 - 287, and do
(a) problems 2 - 10 even, page 288 - 289 and
(b) problems 13, 14, and 15, page 288 - 289.
(2) Work Section 8 - 4 in Redgrave, pages 75 and 76.

____ 3. a. (1) Read Dolciani, et al., pages 289 - 290, and do
(a) written 8 - 24 even, problems 2, 6, 8 and
(b) problems 12, 14, and 15, pages 290 - 291.

____ 4. Listen to tape, Ratio and Per Cent, #3, sides 1 and 2, SRA Mathtapes.

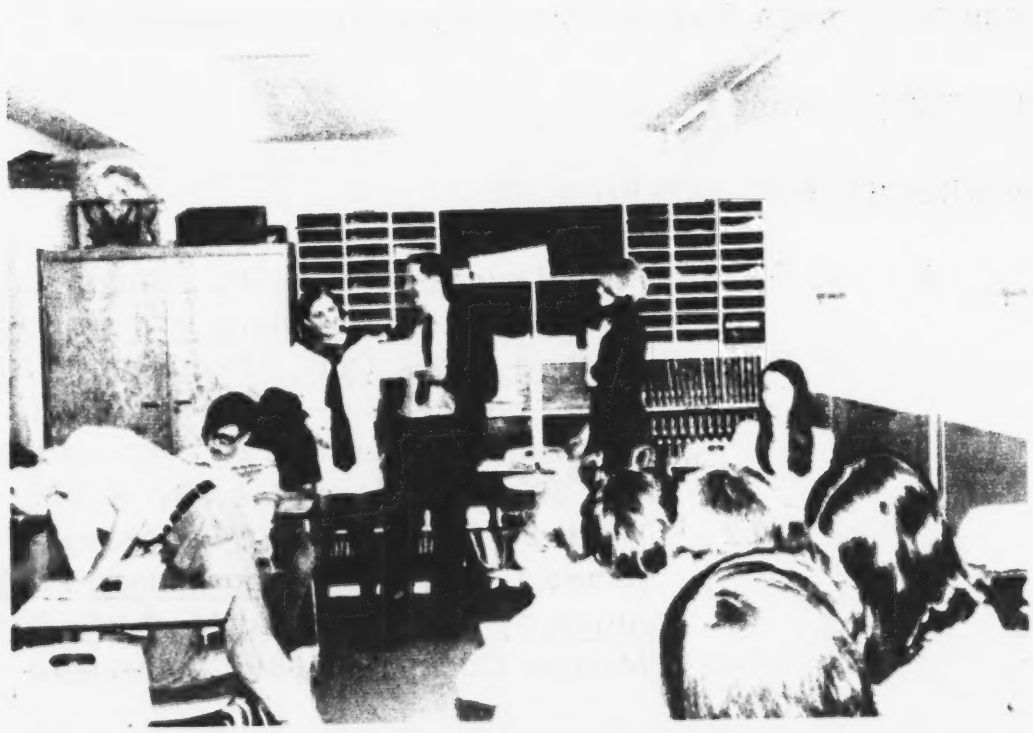
____ 5. Listen to tape, Problem Solving, #3, sides 1 and 2, SRA Mathtapes.

____ 6. View filmstrip, "Percent Discount and Commission", Eye Gate House Inc., #5-1-G, frames 4 - 28.

____ 7. Attend small group MA - 482 - 115.2.

____ 8. Work in MLRC for 30 minutes (must be verified).

POST-TEST: MA - 482 - 115.8



Teacher and pupils in a math island.

PART IV

The Teacher Aide in Special Education

LANGUAGE DEVELOPMENT

By Carole Peterson and Marion Updike

During the spring of 1969 an aide project utilizing a teacher aide specializing in Language Arts and Language Development was devised by Mrs. O. A. Knutson, Director of Special Education, Grand Forks, and Mrs. Margaret Abbott, Director of The Teacher and His Staff Project. The proposed project was to operate within primary and intermediate classrooms for the educable mentally handicapped in the Grand Forks Public Schools. One full-time instructional aide and a part-time consultant were to be hired to facilitate the project.

Project work begain in earnest in June with the hiring of a consultant having a Speech Therapy and Elementary Education background. The consultant, Mrs. Carole Peterson, met with Mrs. Knutson and Mrs. Abbott and with two teachers representing the primary and intermediate level classrooms--Mrs. Margaret Mason and Mrs. Ada Elliot who assessed the project from the classroom teacher's point of view.

From these meetings the concept emerged of an aide who was to function solely in the area of Language--under the supervision of the classroom teachers and in regular contact with the consultant. A schedule was devised placing the aide in three primary classrooms one full day per week, intermediate classrooms one-half day per week, with the remaining half-day to be used for material preparation and resource.

	Monday	Tuesday	Wednesday	Thursday	Friday
A.M.	Winship	Lincoln Inter-mediate	Roosevelt	Belmont Inter-mediate	Nathan Twining
P.M.	Primary	Office Time	Primary	Winship Inter-mediate	Primary

Plans called for the aide to work with individually selected children in the areas of speaking, listening, reading, and writing, with primary emphasis on oral communication. The consultant should serve also as a liaison person to the speech therapists in each building, asking them for directions and suggestions, advising the aide and supervising speech therapy activities within the classroom.

Mrs. Updike, the teacher aide, consults with
Mrs. Carole Peterson and Mrs. Abbott.

Following a meeting with the State Director of Special Education, Miss Janet Smaltz, to solidify plans, personal interviews were held to select an aide. Interviewing was completed early in June so that the person hired, Mrs. Marian Updike, could enroll in the summer aide-training program conducted by the school system under Mrs. Abbott's direction.

In August Mrs. Peterson and Mrs. Updike began to meet with the goal of orienting Mrs. Updike and preparing materials. A list of suggested readings was prepared for her and she found them to be helpful:

Educating The Retarded Child, Kirk and Johnson, chapters 1, 8, 9, 12.
Mental Retardation, Rothestein, chapters 8, 25, 41, 42, 43.
The Mentally Retarded Child, Robinson and Robinson
Educating Exceptional Children, Kirk, chapters 1, 12.
Psychology of Exceptional Children and Youth, Cruickshank, chapters 4, 9.

Steps to Achievement For The Slow Learner, Ebersole, Kephart, Ebersole, chapters 1, 2, 7, 10, 11.

They ordered some materials in advance, although they decided to order as the need arose. The following materials proved extremely valuable.

1. A cassette tape recorder
2. The Child Speaks by Margaret Byrne
3. Language arts materials
4. Sounds I Say Books I & II plus teacher's manuals
5. Structural Reading Kit A (teacher's kit)
6. Sounds I Can Hear (a set of tapes for listening, speaking use)
7. Concepto Charts

Expendable supplies such as felt pens and transparencies were purchased at a local school supply store as needed.

Mrs. Updike did not enter the classrooms during the first week of school. She spent the time in reading, meeting with Mrs. Peterson, visiting various classrooms and preparing lessons. From the beginning, both teachers and students greeted Mrs. Updike's entry into the classroom with acceptance and enthusiasm.

Although the teachers had been informed that the aide was to be under their direction while in their classroom, they were not expected to write out directions or to plan her day for her. Rather, the teacher was to select children needing extra help in a given language area and to describe their needs; the aide would then carry on with preparation of materials and actual work with the pupil--with observations and suggestions, of course, by the teacher.

It was for this reason (preparation) that the aide was given a half-day per week free from classroom responsibilities. She was not expected to remain after school nor to prepare materials at home. As an aide she should be in her assigned room by 8:15 a.m. and could leave for the noon-hour and again at 3:30 p.m. upon dismissal. Mrs. Updike found herself putting in somewhat longer hours at times, although this was left entirely to her discretion.

Mrs. Peterson, consultant, made classroom visitations one a week and was available at any time to Mrs. Updike and teachers. Sometimes, they met for longer periods on Mrs. Updike's half-day out of the classroom or after school. Mrs. Updike also made monthly narrative-type reports to Mrs. Abbott, project director.

Early in the fall the members of the project met with the speech therapists to obtain suggestions and recommendations concerning children receiving speech therapy.

Mrs. Peterson studied the recommendations and then met with Mrs. Updike to plan their implementation.

The speech activities ranged from simple carryover activities to more complex areas such as categorizing, speech, reading and voice projection. They got in touch with speech therapists for reports on responses and to ask for new recommendations and observations.

Once the total project was operational, further plans for an objective statistical evaluation of the program were made. Aside from the enthusiasm of persons concerned and day-to-day gains seen in individual children, the project director felt that a more objective evaluation would be helpful. A project such as this is inherently difficult to evaluate, not only because of the variety of "tasks" and methods involved but also because of the sparsity of language-development tests available today touching on more than oral language. In October the project director made the final decision to use the Illinois Test of Psycholinguistic Abilities on a test-retest basis with a two-fold purpose: 1) to get statistical information on fifteen selected students with whom Mrs. Updike was working; 2) to use the original test results as a diagnostic tool to pinpoint areas of difficulty so that remediation could begin. Mr. Rodney Fillund of the Special Education Department of the University of North Dakota agreed to administer and interpret the tests. The test results with his recommendations were made available to Mrs. Peterson, Mrs. Knutson, and classroom teachers. (It is appropriate to note at this point that building principals were always informed of all activities and persons coming and going in their respective buildings.)

Following a consultation with Mr. Gillund and further study of the results, Mrs. Peterson begain planning remedial type utilization of the results. The director felt that one use might be a "kit" approach stressing five ITPA sub-test areas that appeared to present the greatest difficulty to a number of students. In simplified form the kit covered:

The kit, found to be useful and attractive to children at both primary and intermediate levels, had a variety of uses.

As the year progressed, Mrs. Updike found herself working more and more with certain language-handicapped children. Her peronal notations regarding work done with these children follow:

Primary Class A: "I have usually worked with the children on a one-to-one or two basis--never more than three children at a time. I accompanied this class on three field trips. The first was a bus tour of the city. The second was a tour of local churches and the third was a trip to the school custodian's home to see a coal burning furnace. I've also helped on class projects within the room. I have concentrated on several children that the teacher pointed out as having particular needs: One pupil learned to relate stories. At first I had to use leading questions with yes or no answers but he can now relate stories and is aware of rudimentary written sentence structure. Another girl and I worked primarily on simple, action verbs, saying them, acting them out and reading them. I have also worked with some of the children on learning the alphabet and have administered Fitzhugh tests."

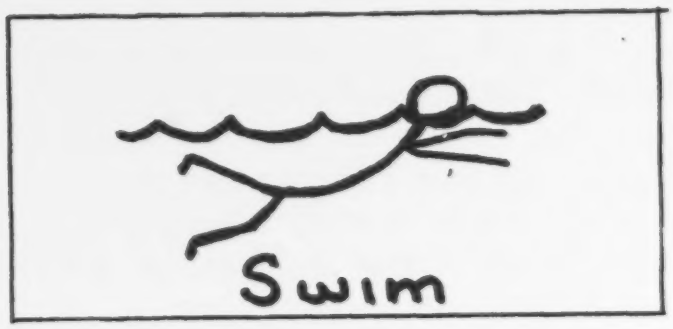
Primary Class B: "I have worked quite independently with few suggestions from the teacher. With one particular girl I have concentrated on learning the alphabet and discrimination of letters and color names. With one boy having little or no speech, I have used the Peabody Language Kit, identification of people and objects in the room, talked about his home and family, practiced writing names and used toys to stimulate speech."

Mrs. Updike and Peabody Language Kit.

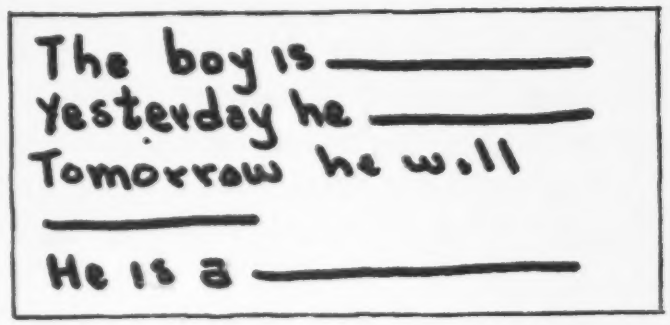
A. Plurals and singulars
B. Verb tense
C. Comparisons (big, bigger, biggest)
D. Names (driving - a driver)
E. Analogies

The kit, prepared jointly by the aide and consultant, consisted of large illustrations, colored pictures and muscript writing done on 8 1/2 x 11 tagboard sheets stored separately in an accordian-type folder and purposely kept in unbound form.

Side One



Side Two



Mrs. Updike works with pupil
on material from kit.

who proved to be an unusually fine aide. She functioned independently and with few problems. The success of the project is due in great part to her effort and excellence.

The project as it was developed within the Grand Forks Public School System could be either utilized or adapted elsewhere with modifications to meet needs of specific school districts.

There is little doubt that area-instructional aides can strengthen and reinforce work of classroom teachers and speech therapists. It has also been demonstrated that a carefully chosen nonprofessional or lay person, if prepared and supervised, can effectively further the development of handicapped children.

An itemized listing of specific activities carried on by Mrs. Updike follows:

Primary Classes

1. Speech Carryover (sound discrimination and reproduction)

2. Peabody Kit Lessons

3. Reading and writing readiness exercises on an individual and small group basis.

4. Visual and spatial discrimination

5. Recognition and reproduction of the alphabet (in written and oral form)

6. Recognition and reproduction of numbers

7. Classification and categorization of people, ideas, animals and objects.

8. Language Usage (opposites, plurals, vocations, shapes)

9. Narrative Stories

10. Field trips followed by discussions and story writing.

Primary Class C: "Here I have worked with the whole class at times. Usually I present the Peabody kit lesson for that day and sometimes conduct morning exercises. I have assisted children in completing writing exercises and have had children dictate stories and then read them to the whole class as the youngster help up a picture of the story. I have had children dictate their story into the tape recorder and then played it back to the whole class while the child stands up as his or her story comes on the tape. I have read stories at milk time, shown film strips and conducted discussion periods."

Intermediate Class A: "This is a small class of seven children, so I have been able to work with each student for about one half-hour a morning. One particular girl and I have concentrated on carryover of the S sound and have developed a speech book--another physically handicapped boy is working on the K and P sounds and I work with him on initial consonants. Two of the girls have been introduced to nouns and verbs--while another is working on visual and spoken discrimination of words."

Intermediate Class B: "This is a large class with several children needing individual help. One severely handicapped boy and I concentrated on reading vocabulary and oral reading. I stressed putting the ends on words, and we used the tape recorder. One girl and I carried out the speech therapist's recommendations of naming body parts, everyday greetings, and categorizing. I conducted several small group-discussions and once in a while played a phonics game with the students."

Intermediate Class: "In this small class I have concentrated on helping one girl achieve carryover of the R sound. I have presented Peabody lessons, small group discussion, interpretation of ideas or pictures and done phonics exercises. I helped the students make puppets and prepared skits and riddles to perform, and I also took oral book reports."

These comments by Mrs. Updike are necessarily brief but do give the reader some idea of her activities.

The overall project appears to have been successful. Problems occurring were of a minor nature (schedule changes); more serious difficulties involving line of authority, activities or basic philosophy did not occur. This was in no small part due to the unusual performance of Mrs. Updike,

Intermediate Classes

1. Vocabulary review and usage

2. Phonics review (beginning and rhyming sounds)

3. Speech therapy carryover

4. Language usage

5. Reading Comprehension

6. Creative Writing

7. Number words and numerical order

8. Peabody Kit lessons

9. Field trips

At the conclusion of the school year Mrs. Updike made the following observations and recommendations:

1. The six-day lapse between visits results in too much being forgotten and in a lack of continuity. It would be better to divide the school year into segments allowing two or three weeks of continuous work in a classroom--or a half-day divided between two classes; then change and rotate to cover all classes.

2. A conference with teachers, not necessarily detailed is desirable, to allow the aide to plan activities that would be relative in content and difficulty to classroom work.

3. If possible, a definite working area for the aide either in or out of the classroom should be provided. There is a need for a place that students can associate with the aide and for her to leave her materials.

Mrs. Updike felt that a liaison person operating between teachers, speech therapists and aides to coordinate activities is a good idea. She also was favorably inclined toward her flexible schedule within the classrooms.

THE TEACHER AIDE IN SPECIAL EDUCATION

Teaching Motor Coordination

by Karen Griffin

"Teacher Aide Wanted"--the beginning of a most interesting and personally rewarding experience. As the aide chosen for this assignment my qualifications were: one year of college, a few years of experience in volunteer work with retarded children, a genuine liking for all children, and a fondness for playing games! My job--to teach motor coordination to the children in special education.

As an aide, I received much help and advice from the director of the teacher aide project, the director of special education, the principal of the school, and a physical education teacher. The first thing we did was to order equipment for our classes which included balance beams, large rubber balls, bean bags, return net for ball throwing, table tennis set, record player, bean bag game, mat modules, ring toss set, rope skipping kit, Tun-L-Fun, and a rocker walker. Records that we found particularly helpful were: Simplified Folk Dances, Basic Concepts Through Dance (Body Image), Concept Record Volume One (Basic Songs for Exceptional Children), Concept Record Volume Three (Basic Songs for Exceptional Children). Bowmar Records Rhythm Time, Estamae's Circus Fun and Ball Bouncing #4, Honor Your Partner Album #14 and #24.

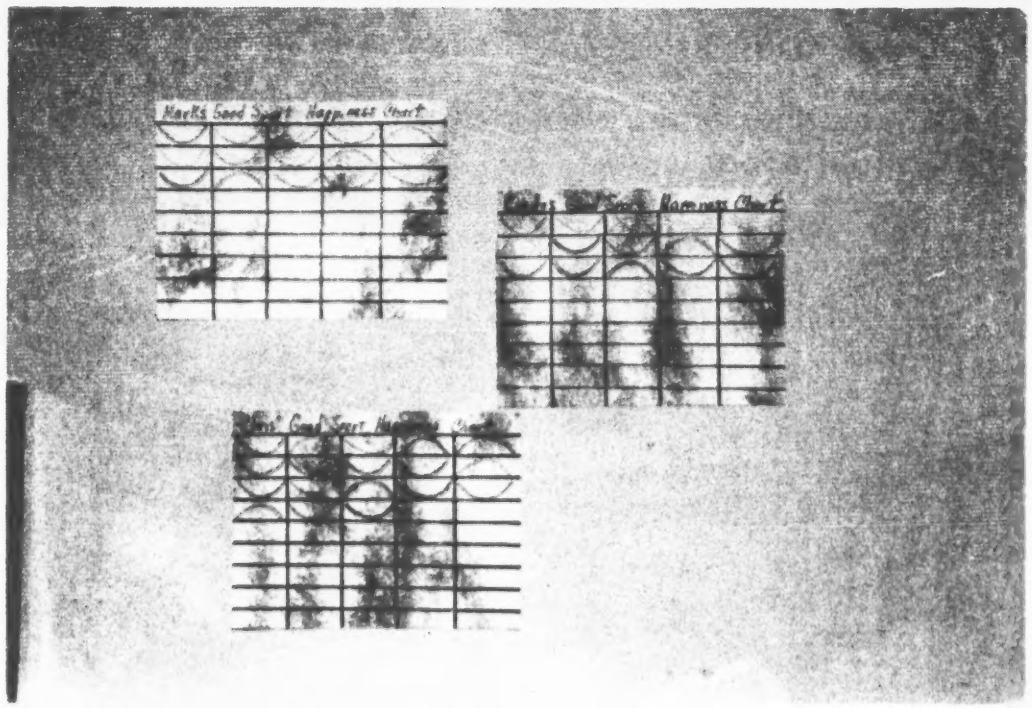
This program can be carried out in a relatively small amount of space if necessary. The use of a gym is ideal, but we have worked in the classtoom. A small space limits activities somewhat but I feel any concentrated effort on physical fitness is beneficial to the children affecting all phases of their learning and growth.

During the year 1968-69 I worked with three special-education classes at one school. The children had a motor coordination class each day. In 1969-70 I traveled to five different schools to work with six classes. The purpose of the second year program was to pass on to the special education teachers some of the techniques and methods we had developed. After my weekly visit the program was to be carried out the rest of the week by the teacher. Of the two programs I feel that a full-time aide is most beneficial. It enables the children to receive a more concentrated effort.

Karen Griffin, teacher aide, works with a special-education class in a limited space area.

The teachers don't always have time to carry this program out because of the many other demands on their time.

The motor coordination program consisted of both group activities and individual instruction. Both are necessary and desirable. The group activity helps teach good sportsmanship and the need to follow group rules, and encourages the children to "hustle" for their turn. Good sportsmanship is hard for these children, but we were helped in that area by our "GOOD SPORT HAPPINESS CHARTS." This is merely a piece of construction paper divided into squares with the child's name at the tope. For each day he is a good sport and a good iistener he gets a smile on his chart. If he fails to be a good sport, he gets a frown.



Good Sport Happiness Chart

It's surprising how hard these children will try for a chart full of smiles to take home to show Mom and Dad! Individual help is also important. This is especially true if a child is very poorly coordinated or has a difficult time following group instructions and play. As an example, some children have a very difficult time identifying body parts. If you take this child by himself and help him, it doesn't take him long to learn them in most cases. This same child in a group would be easily distracted by the other children.

Music was a very important part of this program. Children in special education seem especially responsive to music. We learned a few simple folk dances which the children seemed to enjoy very much. We also did exercises, bounced balls, walked, ran, skipped, jumped, hopped and whirled to music. Everything seemed to be easier for these children when they had music.

Another area we concentrated on particularly was "staying power." Many of these children seem to be lacking in stamina. Therefore, we did a lot of running, skipping and other things and always encouraged the child to go just a little bit further or try a little longer. I feel that almost all of the children in these classes did increase their staying power a great deal.

The progress of these children wouldn't seem great if measured by standard tests. We have measured each child as an individual and I will give you just a few examples of progress made: Mark couldn't jump any distance at all when we first started this program; now he can jump one foot--this isn't a great distance but to Mark it is great and has given him a real sense of accomplishment. Terry was afraid of a ball coming toward him but now has learned to catch. He still has a long way to go to gain confidence, but it is a start. Carla has mastered the balance beam going forward and is working on mastering going backwards. At the beginning of our project she couldn't keep her balance at all. Penny has learned to take losing in her stride--she knows she will win another time. Eldon seems to be more aware of his surroundings and really enjoys the square dancing. Our progress can't truly be measured--each child has gained something from this program--some a great deal. I know I have profited from this program; the children, the teachers I've worked with, everyone has been great! I would encourage and recommend this type of program most heartily as a great experience for anyone involved!

Esther Knutson, Director of Special-Education, Karen Griffin, Teacher Aide, and Margaret Mason, special-education teacher, look at a progress chart.

A Comparative Study of Traditional Procedures and Operant Conditioning Procedures as Applied to Speech Correction in Public Schools

By Darrell A. Peterson

This study had a twofold purpose: first, to develop and try out operant conditioning procedures as applied to speech correction in public schools; and second, to determine if teacher aides could be used effectively in such a program. Operant conditioning means the modification of behavior through a system of instant positive reinforcement.

Directors of the program constructed a specially designed therapy sequence for the study, to be adaptable to operant procedures. This included the development of innovative materials, such as a device for dispensing tokens in the form of trading stamps for the reinforcement of learning.

A teacher aide was chosen to administer the operant conditioning procedures. This aide was untrained and received little instruction other than an explanation of the therapy sequence and the equipment to be used in the program.

Three groups of subjects with defective articulation made up the sections for the study: Group I from Nathan Twining Elementary School in Grand Forks became the operant group; Group II from Dakota Elementary School in Minot was designated the "traditional" therapy group; Group III from three schools in Grand Forks County formed the untreated group.

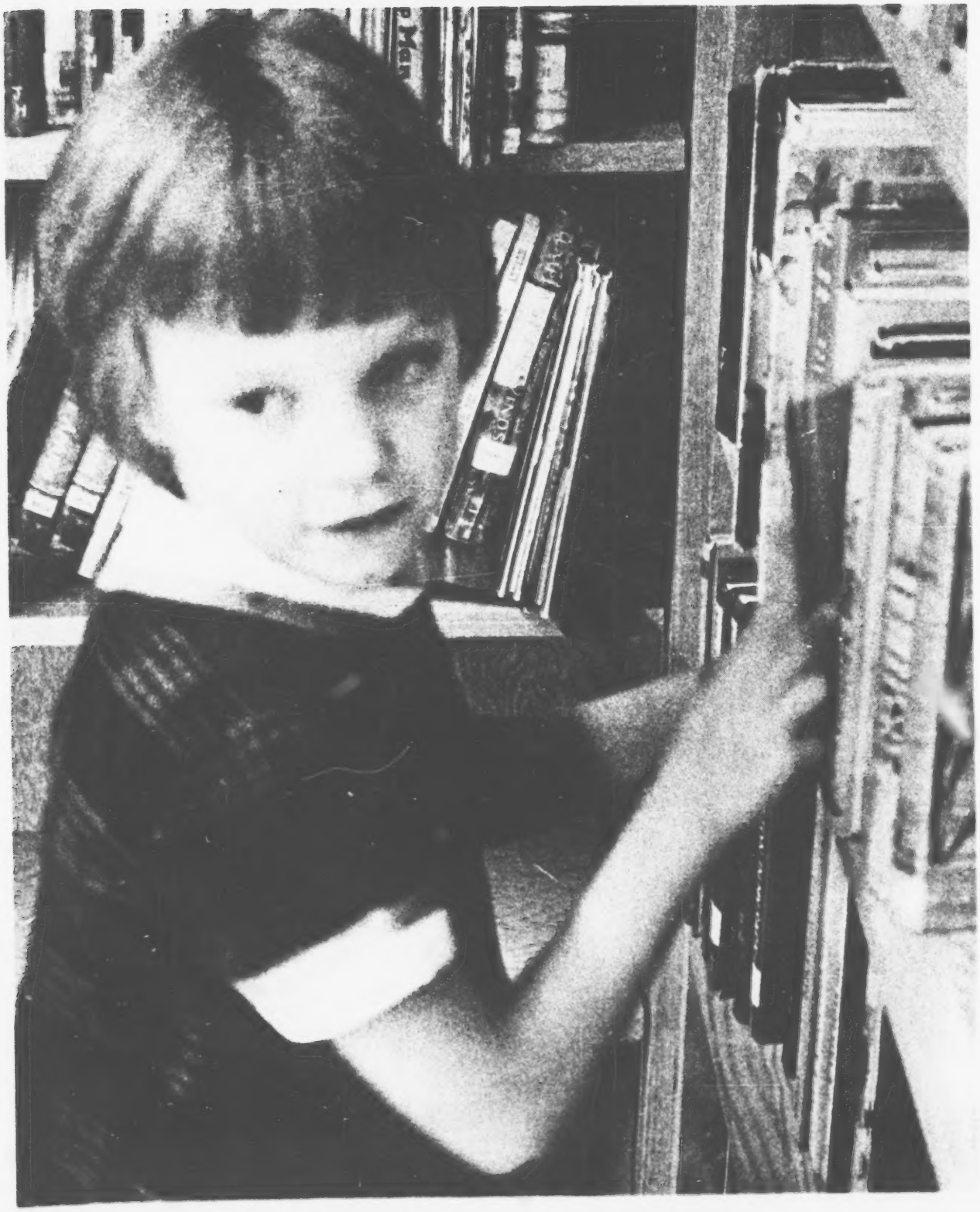
The results showed that the group receiving no therapy improved a total of 82 points, and the group receiving "traditional" therapy improved 114.5 points, while the group in the operant program improved 298 points.

The following conclusions were made:

1. It is feasible to use operant conditioning procedures in a public school system.
2. A teacher aide can successfully handle a portion of the public school clinician's case load.

PART V

Subjective Evaluation



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SUBJECTIVE EVALUATION

The Teachers Speak:

Teacher No. 1

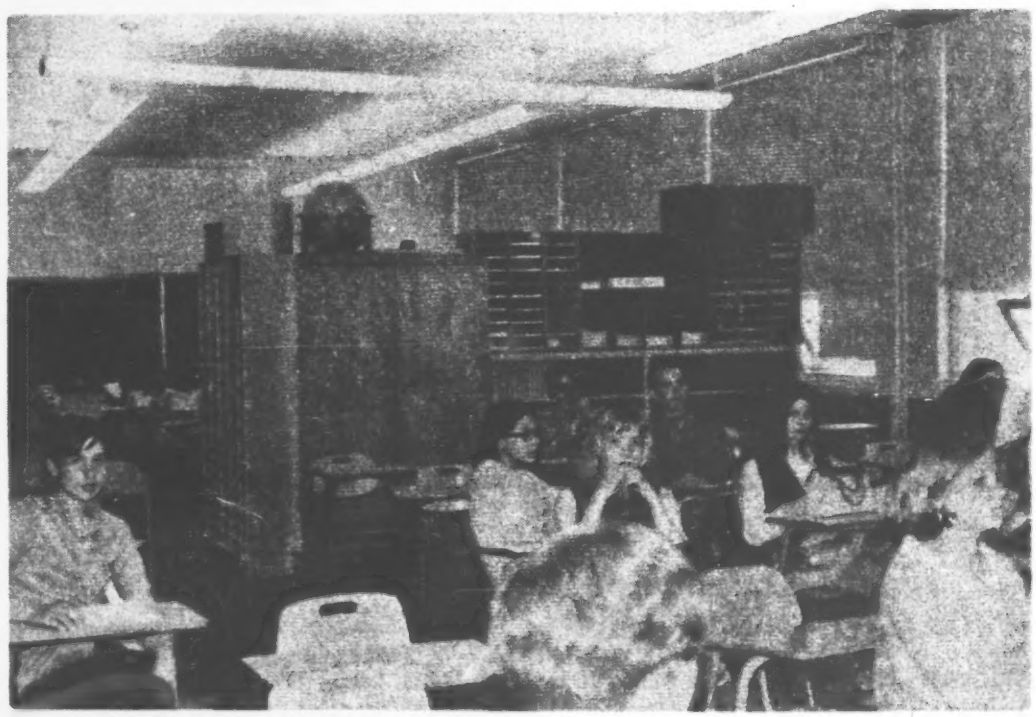
The aide provides that extra bit of help that you need to experiment and innovate so that the children don't suffer from lack of communication between the teacher and student. Last year we experimented a little bit with C.P.E. (Continuous Progress Education) in the individual classrooms. We used the aides to do mainly clerical work. This year we've expanded the program into the algebra islands for continuous progress, and the aide function there has become more diversified than ever before. She is not only doing clerical work but at times helps students with simple arithmetic and this sort of thing. We couldn't run the program without an aide. With our three

The aide and a pupil work together.

classrooms she handles the testing and the grading, so she's a very important part of the program. We just couldn't operate without her. This year in 5 sections of algebra we use continuous progress, 2 sections of 8th grade and 3 sections of 7th grade. The people involved

have gone ahead and expanded it on their own. This is not related to the experimental island at all just something they want to do. They're pleased with it and it's working.

We have one student in particular who transferred here last September from a SAC base in Germany. He had completed at that time 2/3 of the existing algebra course that we have here at South. It happened to be the same book, fortunately. In a matter of 2 weeks he completed the contracts to finish Algebra I and at the end of January he had completed all of the contracts and passed Geometry I and at this point, as of today, February 18, he is on the 5th contract of Algebra II and he is only a 9th-grade student. In our 3rd section in the morning, which is our power algebra, we have many students there who have finished or just about finished Algebra I and we'll be starting Geometry I very shortly. In our 8th grade sections I have 5 students who have finished the 8th grade program at the end of the first semester and are somewhere between 25 and 30 per cent through the algebra course. I think that the program is providing for individual differences. We are not only providing for the slow student, which was our basic concern, but we're also providing for the exceptional student, the above-average, as well as the average.



The room works for the program.

It's a little tough to say at this point that we are having fewer failures or less frustrations because the program, as far as the slow student is concerned, has only been operating one semester. We have found at this point that if a student is interested in learning, no matter how poor he is academically, he is now achieving some type of success that he has never had before. Before he always ended up with failure. Now because he can take a longer amount of time to work on a particular contract which involves a certain amount of work he can generally achieve some kind of passing grade. I think the key to the whole thing is that he must want to learn and achieve. If he's the type of student that's irresponsible or has no desire to be in school, then the program isn't going to work for him. I think this is true of any program, experimental or traditional. The desire has to be there. Most slow pupils are probably getting more attention now than they ever had in a traditional classroom. They always were left behind because when you have a 30 to 1 ratio it's pretty difficult to reach all of them and pretty soon the slow ones give up.

Aides really free teachers to be professionals. The biggest thing is that they take care of the normal, everyday tasks which a non-professional can do. For instance: taking the lunch count and taking roll at the beginning of every period; grading certain types of objective tests, and setting up instructional media, filmstrip projectors and movie projectors. This provides me with the time to work with students. This is why we are teachers--to help children. I can immediately have conferences with those that need help rather than doing the little chores first.

A word about pupil behavior--it's better. Certainly we have individuals that cause trouble, but again you can walk into any of the traditional classes and they're also causing problems. One thing that is happening here is that they don't have an opportunity anymore to get hung up in their little private peer groups. They no longer have an audience for a performance. Many of the average students in particular are becoming very responsible where before they relied on the group activity to function. This in particular is in the afternoon classes where we are using continuous progress. We are just going ahead with a small group of slower students while all the other students are working on ahead. We are finding that some of the average students are doing much better than they would have ordinarily in a traditional classroom.

We've never worked so hard in our lives because now we're working with children period after period, minute after minute. We're finding now that students are coming in before school and after school and even

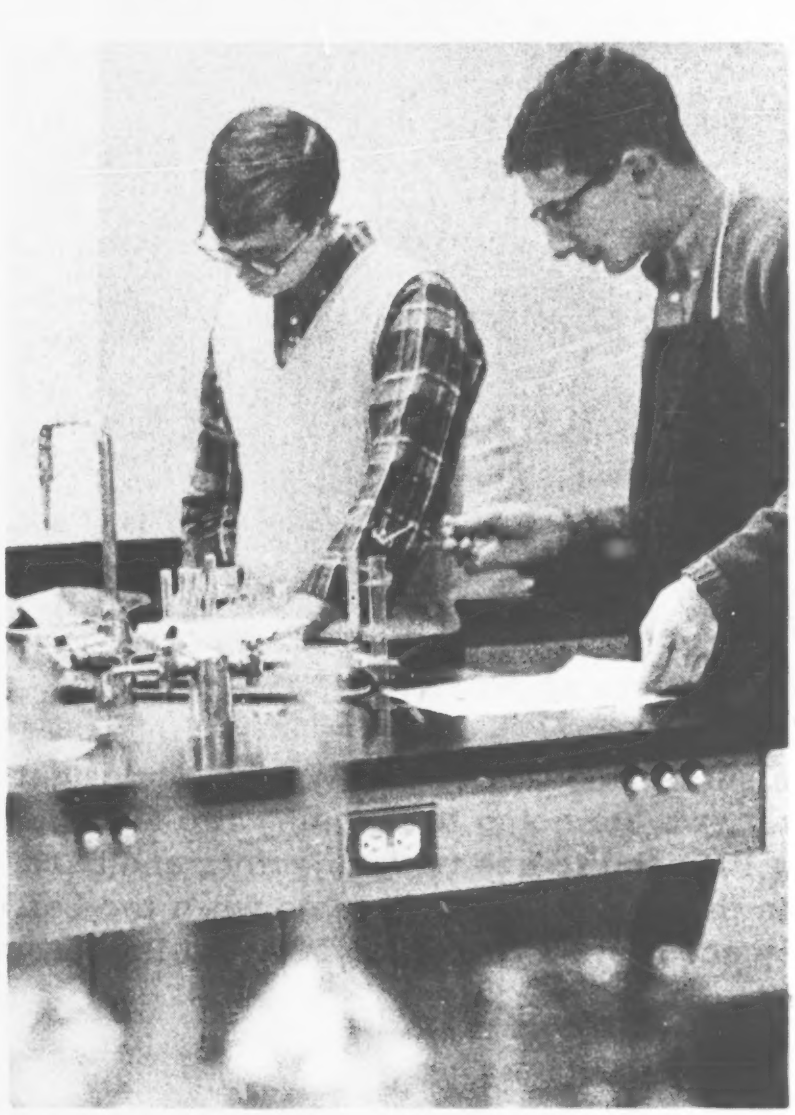
Pupils work together in math.

The teacher gives individual help for an after school pupil.

during our 6th period. The ones getting out at 2:30 that have free time are coming in and getting help then.

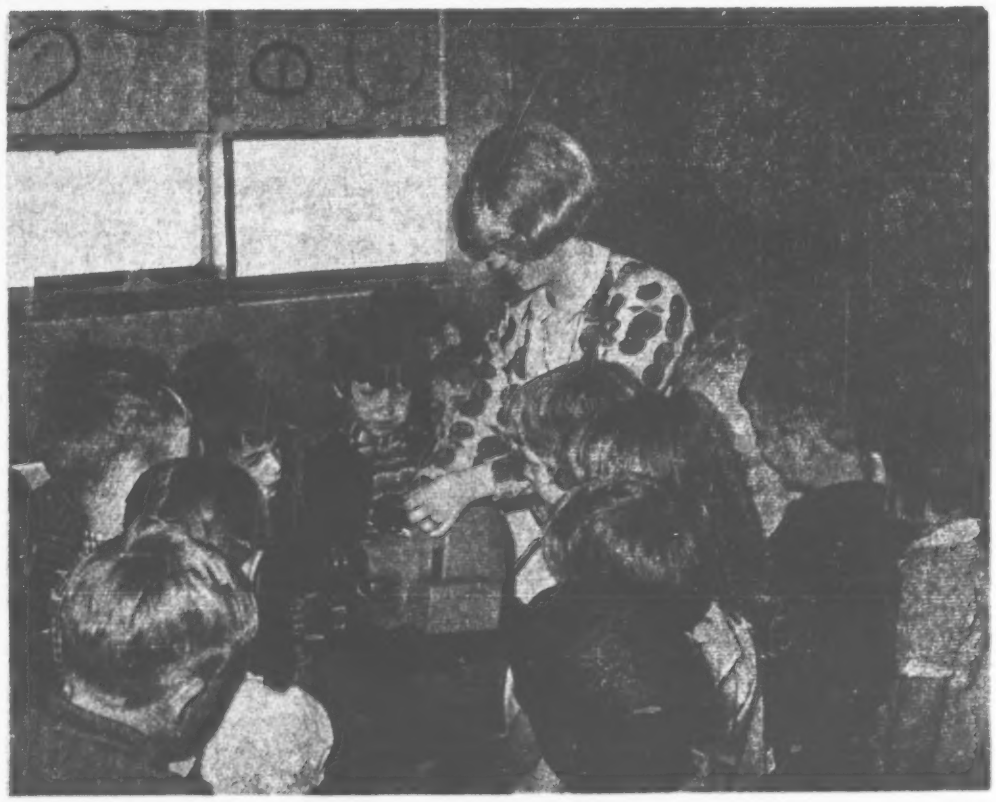
Teacher No. 2

I would like to begin by saying that the teachers' aide program has many merits. For me it was the first step to resuming a teaching career. During the two years I worked as a teacher aide I learned much from the many teachers and students with whom I worked. I discovered that when working with students individually, especially the under-achievers; it takes a while to gain their confidence, but after this is done, this one-to-one relationship seems to work better for some of these students than a large group atmosphere. For example: this year in 7th-grade life science a few of the students who have difficulty in reading weren't doing their work and always failed the tests. I felt this was because they couldn't read the questions. Now an aide is tutoring them and reads their tests to them. They are showing improvement.



Pupils work on individual projects in the lab.

We use the microscopes a great deal in life science, and start by teaching the proper use of the equipment. The aides have been assisting in the lab with this and have really solved the problem of broken lenses and slides. I also have to teach each period in a different lab, thus the equipment moves with me each hour to a different room. Some days I would never make it if I didn't have an aide to help facilitate this and help reset the equipment for the next class. An aide with a science background works with individual students in one section of the lab while I instruct the rest of the class. The students take turns using the microscopes and making drawings of what they see. The aide checks to see that they are seeing what they are supposed to see and not specks of dust.



An aide sets up projector

The aides have helped me set up and move audio-visual equipment from room to room. Shortly, we are going to be using two 60-minute films. In order to do this I'll need to use two projectors and have an aide with a projector in the next room ready to go when the bell rings. I couldn't possibly accomplish this by myself, so I'm fortunate to have an aide.

The aides do an enormous amount of clerical work for me. The typing and reproducing of tests and study guides has really helped me as a new teacher. I gain several hours every week by having an aide correct objective tests. This extra time can be used in class preparation instead of tediously checking papers. This extra preparation time should improve my teaching. Thus you can see why the teachers' aide program, as far as I'm concerned, has much merit. It enables the teacher to give more time to the student.

The teacher gives more time.

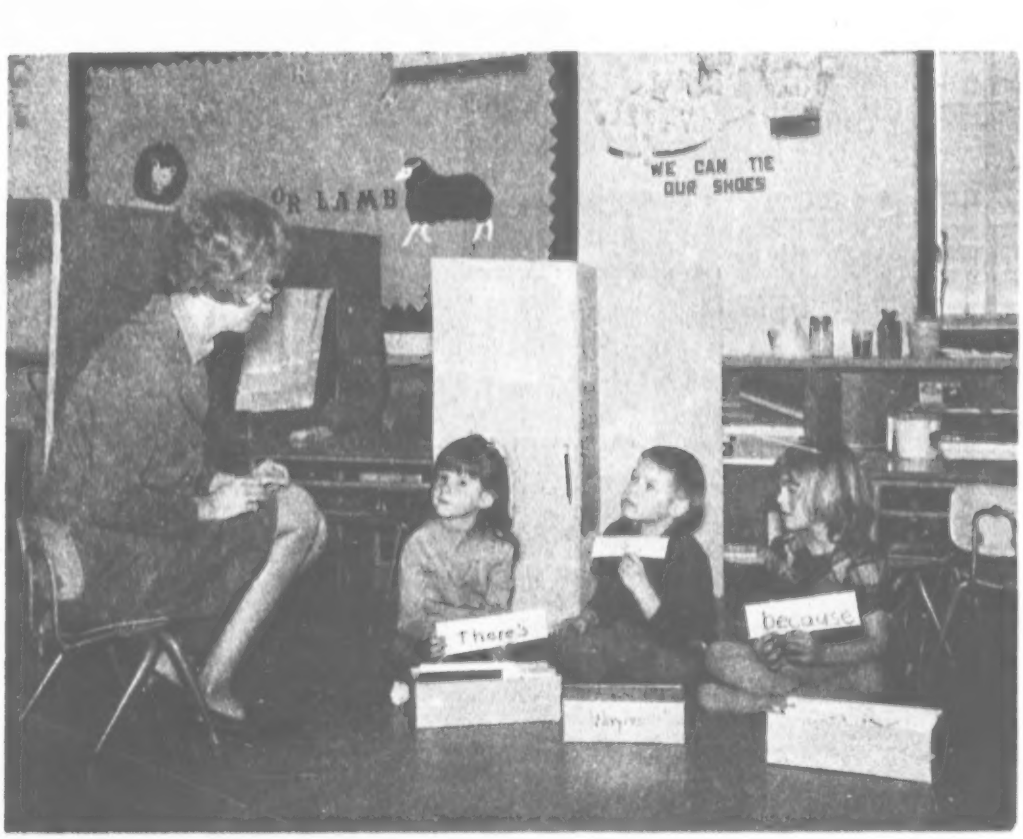
Teacher No. 3

Has the aide helped us in individualized instruction? In experimental programs? Yes. Many of these things we just wouldn't have been able to try without her help. Especially this year, as we don't have the student-teachers that we've had in the past. We've had the same aide for three years which has given us rapport and confidence in her. We know her capabilities, and this is something that I think is essential to our program, especially in the area of remedial work.

I think the aides have really given us help because pupils can identify with them. They can give individual help. The aide becomes a bridge between teachers because she has worked with some of the same children from grade K-3. This can be very important for the children. We've found that the children have really identified with our aide because of her personality. She works well with the children and really prefers to work with them rather than just doing clerical work. She has the ability and know how to work with those that are really having problems. She then comes back and communicates these problems to us--what this child did, or how this child's progress is going. We do the diagnosing and she carried out the plans and then comes back with the results either written or oral.

The aide helps a pupil in math.

This year our aide has been used almost entirely in instructional ways, usually drill, following our instructions. We have her doing a math group and a reading group and a study group with the class. She really enjoys this. The children give her amazing respect. It's just like another teacher coming into the room. In fact we professional teachers are doing a better job because of our aide. For one thing, in the reading group our aide has a group of six students that are all quite below grade level, not just a half year or so but more like a year or two years. She works with them in a program that has been planned for her. She's learned to diagnose things that the students are just not able to do well, and she comes back to tell us. Had we tried this ourselves we wouldn't have had the time to analyze the pupils--analyze how they read orally or some of these things that are so time-consuming. We couldn't accurately diagnose, because of the time factor, but she's been able to come back and tell us how this boy or that girl is having trouble in the area of initial sounds for instance or in reading out loud or something like this. We then can prescribe help for these pupils.



The aide helps with sounds and word recognition.

I've noticed this year that the aide has even counseled the personal problems of the children. One little girl, for instance, is very frustrated many times during the day, just because of her home situation. Some days she won't perform in math. This is something that during a day as a teacher I just wouldn't have time for--to figure out that this is one child's bad day, and how I might help. The aide, working with her for 30 to 40 minutes has been able to help, and the child has a much better day because of it. Today I can see that this child has made much progress. She really performs much better.

Aides can bring something to our school children in their capacity that teachers can't. I think they can do this because they're working with five or six students at a time, while a teacher has to have this group plus the other pupils. The teacher must incorporate these students into the large group and cannot give them the attention they need nor the proper diagnosis. It's a daily kind of thing. You can't diagnose for a child once and say: "Now I know his problem." Most of these children have more than just an academic problem. It's usually emotion or physical.

Aides are special people.

I think we have to sell this concept of aide usage to the community. If your aide has been used entirely for clerical work, the community may come back and say: "Why can't we have a volunteer mothers' organization come in to help." I think we have to sell the community the idea that these aides are special people and they've been trained in special ways.

The aides report to us and we in turn report to the parents using the information they have given us. I don't hesitate to say: "Your child has been working with the teacher aide." I make no excuses for use of the teacher aide. I think this is important. We can't think of the aide as being less than able to perform in the capacity for which she has been hired.

Aides are busy people.

SUBJECTIVE EVALUATION

The Aides Speak:

Aide #1

I have really enjoyed my year as a teachers' aide and would like to continue to be one. I have worked hard but feel it to be a very rewarding experience. I work in a Colony with two teachers and one student teacher. The children are aged five through seven years. I spend most of my time in the classroom. In language arts each morning I work with three groups for thirty minutes each. During this time we do a variety of things including workbook pages (or work sheets) pertaining to the readers; we play games such as: Old Itch; Spin A Sound; Animal Race; Bingo Bang; Sound Hound, etc. We also do related art work.

I take a math group for the first-grade teacher each day, and work with the slower children. I also work with four children who need extra drill in phonics daily. Three afternoons each week I work with the Kindergarten children during group time and see three groups each afternoon.

The aide works with a small group.

Earlier in the school year I spent a lot of time filing and taking inventory of contracts, as this was the first time they have been used in this school. I also spent many hours making ditto masters and running them off. In cases where a set of dittos were to be used, I ran enough for the whole colony at one time and filed them until needed.

It is difficult for me to state the effects teachers' aides have had on the school as this was my first year and I did not observe the situation before they had aides. I would assume that the teachers were unable to give the individual attention to the students that they can now give, because while the teacher is working with one small group at its level, the other children are in other groups being helped, supervised or instructed and not just doing "busy work." There are obvious benefits of a higher adult-pupil ratio, and each child is made to feel a special person and not just one of a large group.

Also as busy as I am all the time, I often wonder how the teachers ever had any time at all even during the evening to do anything other than school preparation, records, filing, etc. Although much of this is now handled by aides, the teachers still have a very busy schedule.

The children accepted me as part of the Colony. As a matter of fact, I was rather amused to be asked this week (by a child) what a teacher aide was, as a friend of her Mommy's had applied to be one. I told the little girl I was a teacher aide and she seemed most surprised. It did not occur to me at the time to ask what she thought I was. The reply may have been very enlightening.

Aide #2

My third year as an aide has brought many new experiences. I found that the teachers involved me more with the students than in previous years.

My schedule has been very stable since December. The mornings included my regular reading and math groups, plus spelling supervision. The afternoons found me traveling with the music teacher. While she had music for one section of a team room I had study time, planned activity etc. for students in the other half of the room. This provided the teacher fifty minutes of planning time.

Because I have worked so much this year with low achievers, as well as children with problems, my thought is, "How much individual help

could these children have received without teacher aides?" When a teacher has thirty-two students she just doesn't have enough hours in a day to give help which these low-achieving children need. It takes a great deal of planning for the teacher to use aides in small-group tutoring. The teachers have done a marvelous job in this respect.

The aide does small-group tutoring.

I have a feeling that some of the teachers with whom I have been working think negatively about the aide program. There are days when I have the feeling the only thing they appreciate that we aides do is give them a duty-free noon-hour.

The highlight of my year has been having success with problem children in my math group. Another great day was making kites and flying them for a reading group.

I am proud to have been a "pioneer" in the Title III Teacher Aide Project.

Aide #3

Though often frustrating, my work as a tutor is my most rewarding task. Here I have the chance to help the students that really need individual help. If left with the rest of the class, they would be rushed along too rapidly and not learn the basic skills necessary for future work in math. By working with small groups of five students, each receives help in his most deficient areas. The students also benefit by helping others in the group. By having more individualized instruction, the students waste less time. The work is explained to them in terms they can understand.

The work is explained in terms they can understand.

One trying day I asked one of the students why he didn't work harder. His reply was that he was doing more work than he ever had before!

Part of my day is also spent correcting tests and recording grades for the students working on contracts. This is beneficial to the students because they get immediate feed-back on their test results, which makes a test a much better learning experience. If the instructor had to correct and record all the tests, the students would either have to

wait longer for their results, or they would receive less instructional help from the teacher.

I feel that the teachers' aide program is a positive benefit to a school, both to faculty and students. It relieves the faculty of many tedious tasks, but most important, more time can be devoted to the students.

Aide #4

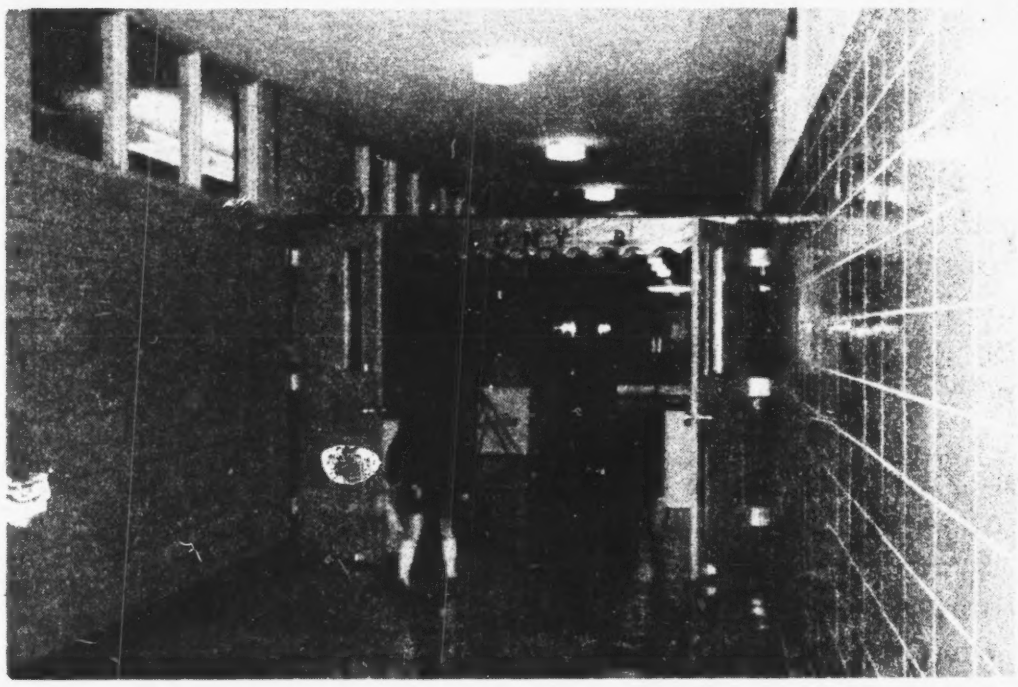
During the 1968-69 school year, I worked as a secretary at Carl Ben Eielson School. Many exciting things happen in the front office and many times I wondered what went on backstage. So I decided, if I could, I would find out. There was only one way to get behind the curtain, so I applied for the position of clerical aide. They hired me. I've decided that what's up front counts, but behind the curtain is where the action is.

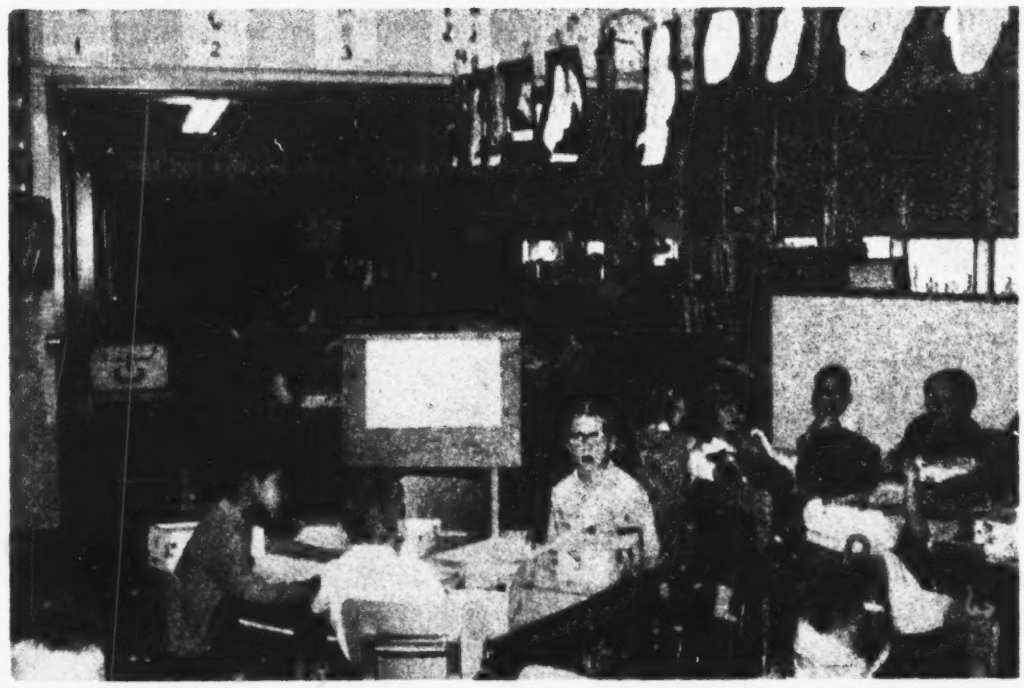
Our Colony, Colony B, is comprised of a team leader, three staff teachers, an instructor aide and myself. But I wanted more than that: I wanted to associate myself with the children and get to know them. Our team made this come true. In addition to my clerical duties, I also work with small groups of children. It has been so enlightening to work with one particular group, as these children needed more individualized attention in handwiring skills. Under the direction of one of the teachers, I found it fun to spend a half-hour or so helping them to become proficient in this area.

Just working with these six- and seven-year old children can be fun. In the morning, meeting them at the door, with their eagerness to enter the classroom, is a delight to see. Many mornings, I perhaps don't feel so pleasant, but just their smile and cheerful, "Good Morning, Mrs. Horrocks," makes my day. Just a week or so ago, I was at the commissary shopping and Chris happened to be shopping with his mother. I noticed his rather quizzical look as we exchanged hellos. Much to my amusement, he yanked on my hand and said, "Mrs. Horrocks, where are your teacher's clothes?" To describe what our teacher's clothes are--they are smocks. The team has found these smocks invaluable. The pockets are large and usually filled with pencils, magic markers, crayons, bandaids, paper clips, etc. - last but not least always candy or a balloon to use as needed.

As the school year draws to a close, we are mentally and physically tired. But it is so rewarding to see how much the children have grown mentally. Just to think that I have been a part of this mental growth is more than a reward to me. I am eagerly looking forward to the next

school year. I feel that the front office is fine for some people, but backstage is where the action is.





"Backstage" is where the action is.

Aide #5

I cannot believe that a year ago at this time I was applying for the position of teachers' aide. This past year has been a very interesting and rewarding one for me. Basically, I discovered that my own children were not really so different, as I thought, but more like all the other kids.

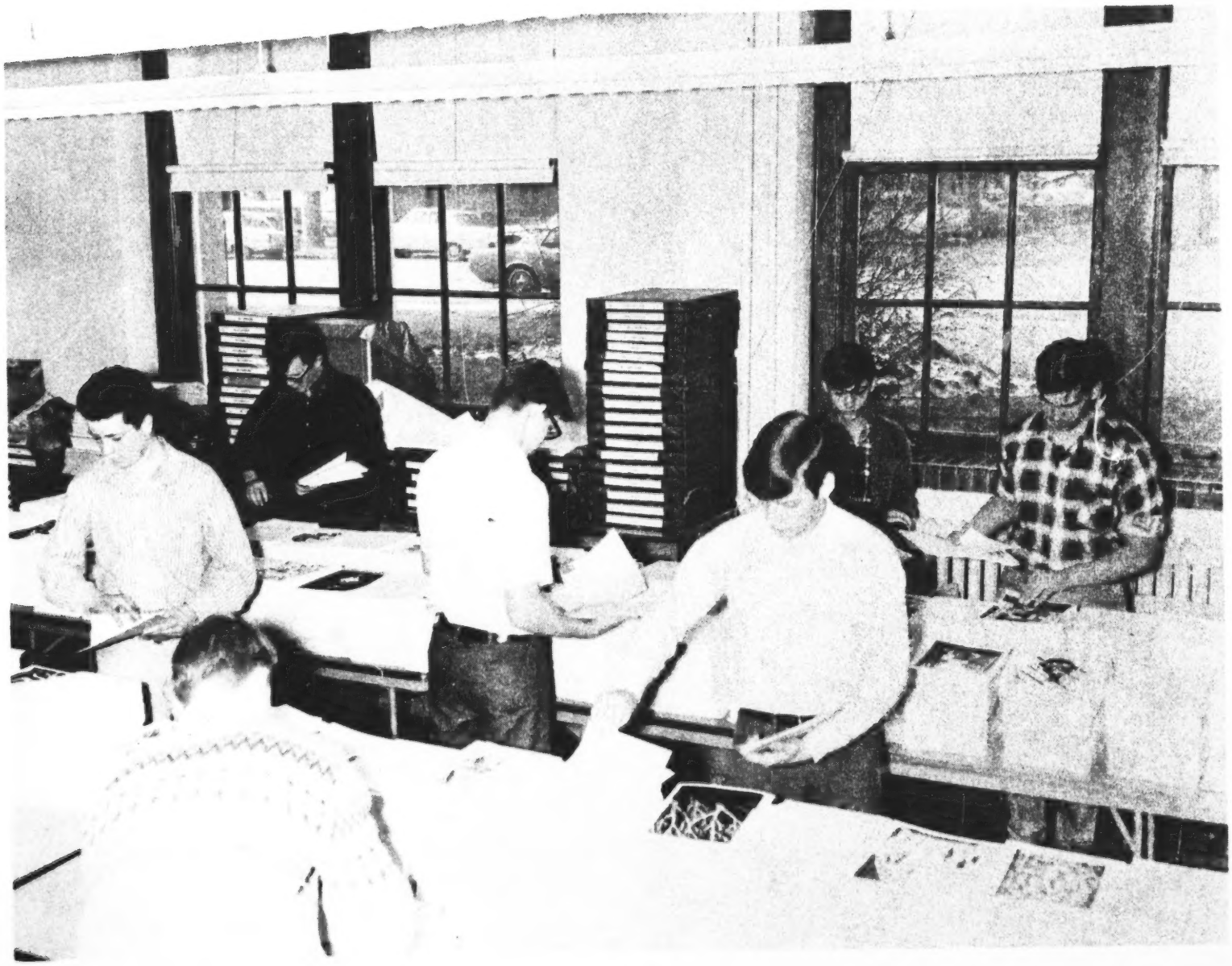
My work is concentrated in the Seventh Grade Language Arts "Island." The work in the "Island" consists of recording and filing of all student contracts. I also correct worksheets and tests from student contract work. During the past four months I have been working with twenty "slower" students. I assist them in reading their short stories and novels, and then together we do the worksheets and vocabulary work for the story or novel. After completing this work, we discuss the story and then the students take the tests.

I also take care of two bulletin boards in the language arts room. I change these at least once a month. About 95 per cent of my time is spent in the "Island." Other duties include hall supervision each day and lunchroom duty periodically. At times, I am asked to cover a class when the teacher has a meeting. A few times this year, I assisted the teacher on field trips, which again was very educational for me. I enjoy my work immensely because each hour of the day is filled with activity.

In closing I would like to say that I would not trade the experiences of the past year for anything. Hopefully, I will be able to continue similar work in another year.

PART VI

Dissemination Report



DISSEMINATION

1. The Teacher and The Aide (handbook)

   A handbook for teachers and aides which sets forth aide policies and guides for working with teacher aides. It is to assist teachers and aides to work together for the best interests of children. mimeograph, 1968, 28 pp.

2. that's not the way i learned it . . .

   Booklet on the Grand Forks Public School System which gives an overview of new directions in the Grand Forks School System. offset, 1968, 28 pp.

3. Meet the Auxiliary Personnel at J. Nelson Kelly Elementary School

   Overview of the program at Kelly School during 1967-68. offset, 1968, 10 pp.

4. Color slide/tape presentation

   The story of the teacher aides during their first year at the three experimental schools. 1968, 24 minutes.

5. Teacher Aides at South Junior High

   The first year of teacher aides at South Junior High. offset, 1968, 13 pp.

6. Speakers Bureau

   List of speakers and topics available to the public from the Grand Forks Public Schools. offset, 1968, 18 pp.

7. Teacher Aides Under Glass

   Article in North Dakota Teacher, March 1968.

8. Teacher and His Staff

   Continuation Proposal 1968-69. offset, 1968, 61 pp.

9. Progress Report

Overview of the first months of the project. mimeograph, 1968, 42 pp.

10. Progress Report

First year and a half of the project as viewed by the teachers in elementary and secondary schools; as viewed by the aides; as viewed by the pupils. offset, 1969, 94 pp.

11. Research Report No. 1 "Implementation of the Teacher and His Staff Concept"

Evaluation of the projects first year, 1967-68, by sub-contractor The Bureau of Educational Research and Services, University of North Dakota. offset, 1969, 182 pp.

12. "A Computerized Approach to Calculating Interaction Analysis Observation Matrices and Ratios."

Article in Educational and Psychological Measurement, Spring 1969

13. Teacher and His Staff

Continuation Proposal 1969-70. offset, 1969, 130 pp.

14. Field Trips Report

Special report from handicapped component. Listing and explaining field trips for educable mentally handicapped. mimeograph 1969, 34 pp.

15. Research Report Handicapped Component: "Teacher and His Staff."

Evaluation of three phases of the handicapped component. Dr. Dean Engel, Dr. Steve Harlow, Mr. William Graveland 1968-69. mimeograph, 1969, 65 pp.

16. Taped Report

Special report from handicapped component. Use of taped material for the secondary educable mentally handicapped. mimeograph, 1969, 19pp.

17. Research Report No. 2. "Implementation of the Teacher and His Staff"
Evaluation of the project's second year, 1968-69, by sub-contractor The Bureau of Educational Research and Services, University of North Dakota. offset, 1969, 139 pp.

18. Language Report
Special Report from handicapped component. Use of aide to develop language in special education classes. mimeograph, 1970, 14 pp with 66 pp. of kit.

19. Preliminary Teacher Aide Training Program Curriculum
Proposal and suggested curriculum for teacher aide training summer 1969. mimeograph, 1969, 54pp.

20. Teacher Aide Training
Teacher Aide Training Program, Grand Forks, North Dakota under EPDA-B2 1969. offset 1969, 121 pp.

21. "Improving Instruction with Teacher Aides"
Article in May, 1970, North Dakota Journal of Education

22. Many newspaper articles.
Grand Forks Herald
The Aerospace Leader
1967-70

23. The Impact of: The Teacher and His Staff.
Final Report 1970. offset 1970,

24. Research Report No. 3. "Implementation of the Teacher and His Staff"
Evaluation of the projects third and final year, 1969-70, by subcontractor The Bureau of Educational Research and Services, University of North Dakota. Plus handicapped component on Taped Project. offset 1970,

25. Research Report Handicapped Component: "Teacher and His Staff"
Evaluation of Language Project, and Physical

26. Films: "More Time to Teach," 16 mm, 14 minutes, color
1968-1969
"Button, Button," 16 mm, 20 minutes, color
1969-1970

Supplementary Information on Films

The University of North Dakota Film Center is affiliated with the Speech Department at the University of North Dakota in Grand Forks. A newly organized operation, the Film Center the past two years has completed several films and multi-media slide and film presentations. The Film Center is well equipped for 16mm filming and editing and with the help of "Bill Snyder Films" in Fargo, North Dakota, can undertake film contracts which involve quite sophisicated film processes and techniques.

The two films undertaken by the Film Center for the Teacher and His Staff Project were the joint effort of many people, both from the University and from the Grand Forks community. Margaret Wold wrote both of the films; the first to depict information concerned with the feelings people involved with the use of teacher aides had toward the aides and the total program; the second, to further report on the individual attitudes of people and to report the results of the research done by the Educational Research Center at the University of North Dakota. John Thompson from the Educational Research Center was Co-Author and Research Consultant for the second film entitled "Button-Button." He also appears in the film to explain the meaning and significance of the research that his organization undertook for this project. Because there was a great deal of audio mixing to be done on both films, David Schroeder, engineer for KFJM Educational Radio on the UND campus, was contracted to engineer for the audio portions of the film. Myron Curry, an extremely talented man with over twenty years of broadcasting experience, narrated the films. Many students of film at the University of North Dakota participated in the making of the film. Most notibly, Robert Bolinger, cinematographer for the first film entitled "More Time to Teach." and Robert Wilkins, audio director, presently teaching at Northern Illinois University in Dekalb, Illinois. Other students worked in setting lights, carrying equipment and doing grip work for the film. The students gained some valuable film production experience, but the films could not have been

done without their, for the most part, volunteer help. Timothy Larson, instructor of television and film at UND, produced and directed both of the films. He will be taking leave from UND to attend the University of Wisconsin in Madison to work on a doctorate in television and film. Special photography was filmed at "Bill Snyder Films," Fargo, North Dakota. John McDonnough of Snyder Films did the conforming and necessary laboratory work prior to the printing of the film.

The teachers, administrators and the teacher aides of Carl Ben Eielson School at the Grand Forks Air Force Base gave willingly and freely of their time and classes. Many interruptions with bulky equipment, bright lights and added personnel in the classroom did not cause the people at Carl Ben Eielson to depart from their professionalism.

The film stock used was Ektacrome Commercial and Ektachrome EF from the Eastman Kodak Company. Kodak did the processing of the original footage, Calvin Communications of Kansas City did the workprinting, and Color Reproductions of California printed the films from the A&B rolls. Each of the companies was extremely helpful and maintained a high degree of film professionalism in all services rendered.

The personnel of the UND Film Center have appreciated the opportunity to do the two teacher aide films and were especially honored to have worked with Margaret Abbott, the project director. Her willingness to help, her patience and her creative ideas helped to make the films a reality.

APPENDIX A - CONTRIBUTORS TO REPORT

Abbott, Jerry, - Principal, J. Nelson Kelly Elementary School (1966-68)
Principal, Cluster Schools (1968-70)

Abbott, Margaret, - Project Director; "The Teacher and His Staff"-
(1967-70)
teacher, English Department, Red River High School
Grand Forks, North Dakota (as of September 1, 1970)

Bergquist, Harold, - Ed.D.; Assistant Superintendent of Schools;
Author of Implementation of the Teacher and His Staff
Project Proposal.

Griffin, Karen, - Teacher Aide - Motor Coordination and Field Trips
(1968-70)

Johnston, Robert, - Team Leader, Core, Central High School

Loberg, Warren, - Principal, South Junior High School

Larson, Timothy, - University of North Dakota

Mrdjenovich, Donald, - Assistant Superintendent of Schools

O'Shea, Daniel, - Principal, Carl Ben Eielson Elementary School

Peterson, Carole, - Consultant "Language Development" (1969-70)
Speech Pathologist, Language Development tutor,
Special Education Department, Grand Forks Public Schools.

Peterson, Darrell, - Speech Therapist, Grand Forks Public Schools

Sherwood, Kenneth, - Director of Curriculum Development Project
(summer 1969) Teacher, Music Department, Red River
High School

Thompson, John, - Director of Graduate Studies in Education, University
of North Dakota, Grand Forks, North Dakota
(Associate Professor at University of Hawaii, as of
September, 1970

Worner, Wayne, - Assistant Superintendent of Curriculum, Grand Forks Public Schools (1966-68); Superintendent of Schools, Grand Forks Public Schools (1968-70)

APPENDIX B - ACKNOWLEDGMENTS

The Project Director and staff of "Implementation of the Teacher and His Staff Concept" express appreciation to the State Department of Public Instruction of North Dakota, to the School Board and to the Administrators, teachers and pupils of the Grand Forks Public School District #1 for their help in making this project a success. We are particularly grateful for the contributions of Dr. Wayne Worner, Dr. Harold Bergquist, Dr. John Thompson, Dr. Donald Mrdjenovich, Timothy Larson, Warren Loberg, Jerry Abbott, Dan O'Shea, Mrs. Marjorie Haugen, and to the women in the business office all of whom were so kind and co-operative.

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